

NOVEMBER '59

MODERN TEXTILES

MAGAZINE

Specializing in Man-Made Fibers and Blends since 1925

FIBERS

FABRICS

FINISHES



FRANK
LESLIE—
a wealth of
interests
makes him
a good textile
salesman—
story page 29

THIS MONTH

Report on Milan

New Dyeing Trends

Orlon on the Turbo Stapler

All about Vinal Fiber

PLUS 11 OTHER USEFUL ARTICLES AND TIMELY REPORTS

VIB

*Vacuum Impregnated Bobbin**



* Patents Pending



DRAPER CORPORATION

"We had a problem . . .
SONOCO solved it!"



THE NEED: Strong, non-returnable cores for heavy denier nylon

For winding heavy denier nylon yarn, exceedingly strong, non-returnable cores were required. These cores had to be capable of withstanding the constrictive force of the yarn which could cause the core to bind on the spindle, making it hard to doff. Furthermore, the cores had to be strong enough to withstand any wall compression, which might occur after winding, since this would interfere with the delivery of the yarn. These cores also had to possess a surface which would prevent slippage in the primary winding. Sonoco sales engineers, along with the research and de-

velopment departments, immediately undertook to solve this complex problem. The solution was found through the right combination of paper, adhesives and core construction. As a result, cores which meet and exceed the demanding requirements are now available from Sonoco.

Only Sonoco, with 60 years' experience, plus modern research and completely integrated manufacturing facilities, could solve this problem quickly. It is typical of countless cases where Sonoco technical and production "know-how" has benefited the industry. *Let Sonoco experience help you!*



Our 60th year
1899 - 1959

SONOCO

Products for Textiles

SONOCO PRODUCTS COMPANY

MODERN TEXTILES MAGAZINE

Modern Textiles Magazine
Established 1925

Published Monthly by
Rayon Publishing Corporation
303 Fifth Ave., New York 16, N. Y.
MUrray Hill 4-0455

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Subscription Rates: North and South America
and U. S. Possessions, one year \$5.00; all other
countries, one year, \$8.00. Postage prepaid by the
publisher. Single copies (current issue), 60 cents.



Member of
Business Publications Audit of Circulation, Inc.

Entered as second-class matter at the Post Office,
Manchester, N. H. Editorial and Circulation offices
at 303 Fifth Avenue, New York 16, N. Y. Publica-
tion offices at 215 Canal Street, Manchester, N. H.
(Originally entered as second-class matter at the
Post Office, New York, N. Y. August 20, 1925).

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American Association of Textile Chemists and
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of America, Inc. 1450 Broadway, New York
Synthetic Organic Chemical Manufacturers
Association 41 E. 42nd St., New York
Textile Distributors Institute,
Inc. 469 Seventh Ave., New York

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NOW EQUIPPED WITH
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ROBERTS SPINNING ★ NEWS ★

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SANFORD,
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WM-2

SANFORD, NORTH CAROLINA, U. S. A.

1959

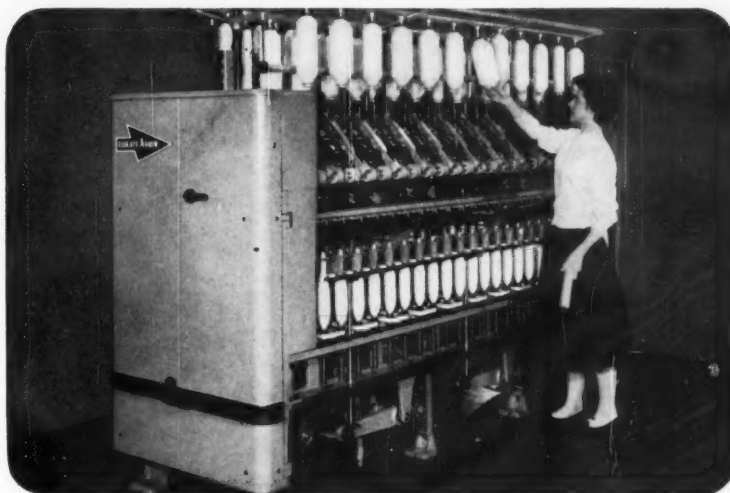
ARROW WM-2 LONG FIBER SPINNING FRAMES OFFER WIDEST YARN MAKING VERSATILITY

A dynamic program of new product design, advanced styling and aggressive merchandising is underway by all segments of the Textile Industry.

Knitting yarns of higher quality and greater interest are being called for in worsted, synthetics and blends. Finer weaving yarns up to 2 ply 80's are being called for and a great many blends are currently being explored. The longer fibers are in wide demand and the next few years should see a substantial boom in this field.

The demand for high bulk knitting yarns and the finer weaving yarns plus all of the newer fabric effects being created require fiber lengths from 3 to 8 inches long.

ARROW WM-2 frames are suitable for making yarns in any fiber length from 1½ to 8 inches. They provide great versatility in handling 100% synthetics, blends of synthetics, 100% worsteds and blends of worsted with synthetics in this range. Better quality yarns with greater evenness, bigger package sizes and higher production speeds are produced on ARROW frames.



- Spins yarn from any natural or synthetic fiber or any blend.
- PermaSet Drafting handles any fiber length from 1½ to 8 inches
- No roll setting changes needed at any time
- Great versatility for changing yarn numbers, twist, draft, ring size, and spindle speed
- Drafts as high as 24 on worsted, 60 on synthetic
- Produces yarn with better evenness and greater breaking strength
- Ball bearing top and bottom rolls eliminate all lubrication in drafting zone
- Almost ideal spinning conditions from delivery roll to spindle
- Runs at higher front roll, traveler and spindle speeds
- Reduces ends down by more than 50%
- Puts twice as much yarn on the bobbin as older frames
- 12-inch bobbins reduce winding costs
- Very rugged, most durable machine ever built for yarn spinning
- Frame is built in the wide-stance 36-inch width
- Uses ball bearings at every moving, turning or oscillating motion
- Substantially lowers electric power consumption
- AeroCreel for single or double roving
- Frame arranged for practical application of overhead cleaning and vacuum floor sweeping

Roberts ShortFlo System for Making Long Fiber Yarns

Roberts Company offers complete technical service in adapting its ShortFlo System for the production of long fiber yarns. This includes the complete yarn manufacturing process starting with tow converters, blending machines, pin drafting, roving frames, spinning frames, winders and twisters.

Where mills have existing equipment, full consideration is given to

utilizing it whenever possible. Or, if a new long-fiber program is planned, all machinery can be specified, and the complete yarn organization set up.

The ShortFlo System for making long fiber yarns requires a minimum number of processes. Many doublings are provided to insure exceptionally good blending of fibers, improved evenness and better strength.

Treat Your Wash- and-Wear to "POL-E-TEX"



**THE *Permanent* FINISH
THAT PUTS MORE
Sales Appeal IN WASH
-AND-WEAR GARMENTS!**

"POL-E-TEX" ... for natural or synthetic fabrics. Assures better lubrication, hand and drape. Improves the tear strength, crease recovery and abrasion resistance of crease-proofing resins. Reduces needle cutting.

Other advantages include high resistance to wear and dirt pick-up; no chlorine retention; no discoloration; no aging rancidity; requires no curing.

Just Try it!



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AviSun Plant 'on Stream'

AviSun Corp.'s new 20 million pound unit at Port Reading, N. J., for producing polypropylene has gone "on stream." The new commercial unit is a converted polyethylene line at the Koppers Co., and is operated by Koppers personnel under AviSun technical direction. AviSun, equally owned by American Viscose Corp. and Sun Oil Co., was formed in February of this year to manufacture and market polypropylene polymer, film and fiber.

AviSun is currently building a commercial plant for production of film and fiber near New Castle, Del. The company, initially, offers two commercial grades of polypropylene—a general purpose grade for injection molders and one for extrusion of monofilaments and fibers. The Port Reading polymer unit uses a process which results in production of highly isotactic and crystalline polypropylene.

Monofilament and multifilament yarns of polypropylene offer good abrasion resistance, strength and elasticity, and their high energy absorbing capacity suggest they will find use in the industrial fibers market.

Metallic Yarn Group Formed

Lanier Branson, Jr., Fairtex Corp., has been elected president of the newly-established Metallic Yarns Institute. Purpose of this Institute is to promote the general welfare of the metallic yarn industry. Other officers are: Alvin Nadel, Standard Yarn Mills, Inc., vice president; Ralph M. Freyberg, Metlon Corp., treasurer, and M. J. Lovell, director-counsel. The board of directors, in addition to the officers, includes: George Berry, Multi-Tex Products Corp.; Jack Gutcheon, Malina Co.; Robert Klingenberg, Metal Films Co.; Robert E. Lewis, Reynolds Metals Co.; Amos Ruddock, Dow Chemical Co., and W. T. Snyder, Nylco Products, Inc. A standards committee has been set up which includes the Messrs Freyberg, Lewis and Ruddock.

Courtaulds to Diversify

A move by Courtaulds, Ltd., and its American and Canadian subsidiaries to move into fields outside textiles was revealed last month. Courtaulds and its subsidiaries in the U.S. and Canada have created jointly two new companies to seek and develop opportunities other than in the field of manmade fiber and yarns. The new companies are Courtaulds, North America, Inc., located in New York City and Courtaulds North America, Ltd. with headquarters in Montreal. Chairman of both new firms is J. Albert Woods, formerly president of Commercial Solvents Corp., Stanley F. Wagdin is president and chief executive officer.

Courtaulds is a world-wide producer of manmade fibers and textiles and also manufactures chemicals, packaging films, plastics, paint and pulp. It has subsidiaries and associate companies in 11 countries.

New Nonwoven Firm

Formation of a new jointly-owned and separately operated subsidiary, the Kimberly-Stevens Corp., to produce and market non woven materials, has been announced by Kimberly-Clark Corp. and J. P. Stevens & Co., Inc. Joseph H. Sutherland will be president of the new company, which has executive and sales offices at 1460 Broadway, New York City.

The new firm will place emphasis on extensive research and development in an effort to create new nonwoven products for new fields not now extensively serviced by either the paper or the textile industries. Examples of such products, it was stated, might be in filtration materials, disposal clothing, medical products, household goods and inner construction fabrics.

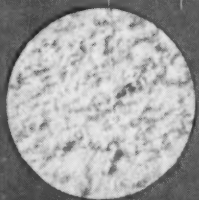
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FLAKE. Recently developed for users requiring a product that always flows freely. Dissolves rapidly. No extra cost!



REGULAR GRANULAR. Fast dissolving, yellow-white, crystalline material for a wide range of applications.



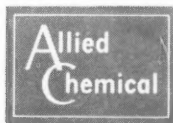
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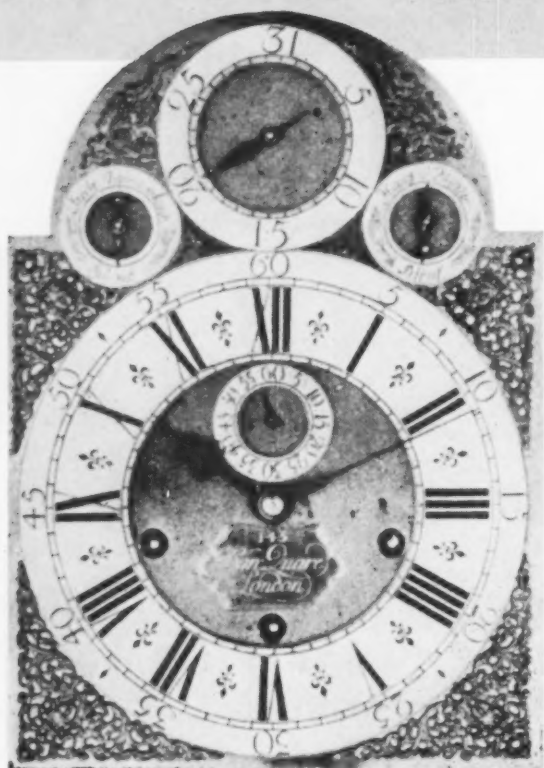
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"Time is my estate", said Goethe. To all successful businessmen, time is a valued asset. They employ Factoring to release valuable time to plan for the Future.



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Parade of Progress
American Textile Machinery Exhibition - International
May 23-27, 1960

Sonoco Sets Up Scholarships

Sonoco products Co., has established two \$500 annual scholarships at the School of Textiles at Clemson College, Clemson, S. C. Recipients of the awards will be selected by the Clemson textile faculty committee from the best qualified undergraduates majoring in textiles.

In announcing the scholarships, C. H. Campbell, Sonoco's vice president in charge of sales, said that it has been recognized that there are not enough students taking textile training in the various textile schools in the southeast to supply the trained personnel required by this major industry. "Many other firms have established scholarships in an effort to encourage more young men to take textile training. Since Sonoco is closely allied to the textile industry, we are glad to join these firms in this worthwhile program."

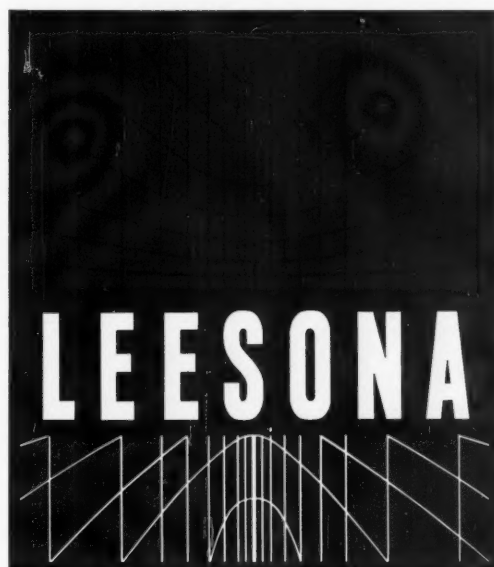
The scholarships for 1959-60 school year have been awarded to William L. Patrick of Charleston, S. C., a sophomore in textile management, and to Roy E. Phillips, sophomore in textile chemistry from Rock Hill, S. C.

Firestone to Make Nylon

Firestone Tire & Rubber Co., with the purchase of the Hopewell, Va., plant of Celanese Corp. of America, has become the first rubber company to extrude its own nylon filament yarn for use in tire cord. The plant will initially produce 1,000,000 pounds of nylon yarn a month, or about enough to take care of around 15% of Firestone's tire cord needs. The plant also will produce polypropylene resin, and at a later date, polyethylene film, saran films and other types of fibers. The materials to be produced also will be used for outdoor furniture, auto fabrics, and rope. The firm is said to have a number of new fibers in research which are not yet in the production stage.

Firestone did not rule out the possibility that the nylon might be used for products other than cord and that the firm would have nylon for sale if there are buyers. Initially, however, all the nylon will be used for tire cord. Production at the plant is slated to begin in late summer, 1960. Firestone Plastics Co., Pottstown, Pa., will become the plastics and synthetic fibers division of firestone and will have charge of the Hopewell plant.

According to J. E. Trainer, Firestone executive vice president, the Hopewell plant will make nylon 6, or caprolactam nylon and not the nylon 6, 6 produced by Du Pont and Chemstrand for tire cord. Allied Chemical Corp., which has a large plant complex at Hopewell, makes nylon 6 tire cord. Other firms make nylon 6 but none produces tire cord.



A new name
.....
... a new look
.....

We've changed our name from UNIVERSAL WINDING COMPANY to LEESONA CORPORATION . . . simply because we've *outgrown* the old name. Our product line now extends far beyond winding machines . . . and our research staff continues to develop new textile machinery that will improve processes, eliminate waste, reduce costs, and make possible better quality. Look for our new trade-mark shown here. It stands for the finest in modern craftsmanship . . . textile machines that can improve *your* operations.

LEESONA CORPORATION, P. O. Box 1605, Providence 1, Rhode Island



The man from Du Pont... ready to help you unwind new fabric ideas

Standing in the midst of some of the new fabrics he has helped to create is Ken Ryan. His title is Fabric Development Manager, but he is better known as a "hard-headed perfectionist."

Shown here with Ken in the new fabrics showroom at Du Pont's New York office is Walter Ross of Rosewood Fabrics, one of many who frequently discuss new fabric concepts based on Du Pont fibers with Ken or his associates.

Ken Ryan's group benefits from the fact that hundreds of Du Pont employees are working on fiber and fabric research, developing and perfecting new modifications of Du Pont nylon, "Dacron"* polyester fiber, "Orlon"** acrylic fiber, "Acele"*** acetate, and rayon fashion yarns. When these developments show real promise, they are further worked out in direct collaboration with mills to assure they will result in fabrics that meet high-fashion and mass-market needs. To initiate new fiber ideas, to find unique textures through new applications of engineering principles, to follow through any economically sound idea that may prove of importance to the textile industry: that's Ken's job.

For this is Du Pont's constant aim—to help the textile industry improve America's textile values. The highly knowledgeable, always practical information developed by the Fabric Development Group helps you, our customer, build a better market for your fabrics.

*"Dacron" and **"Orlon" are Du Pont's registered trademarks.
***"Acele" is a Du Pont trademark.

From raw fibers to retail sales...
Du Pont helps build profits for you





PRODUCT and PROCESS NOTES FROM DU PONT

"ACELE" TYPE 20. A few years ago Du Pont introduced a new modified cross-section acetate yarn called "Type 20" to the upholstery industry. This new yarn demonstrated greater bulk, resilience and covering power in pile-frieze fabrics, set new standards in fabric construction and earned a permanent position in the trade. Now Du Pont offers finedenier "Acele" acetate Type 20 yarns for use in lighter-weight fabrics for apparel and draperies. The modified cross section gives fabrics greater bulk and substance, fuller draping properties and a drier hand, with the look and feel of silk, than conventional acetate yarns have.

NEW 30" FLANGE NYLON TRICOT BEAM. Du Pont has a new 30" flange tricot beam for 30 and 40 denier. This new packaging development, available in limited quantities, is designed to fit the trend to high-speed tricot machines.

Because of its increased size, the new beam contains more than twice the yardage of the conventional 21" beam, enabling mills to run their high-speed knitting machines more than twice as long without change—this accomplished with no sacrifice in performance and quality.

DU PONT SPARKLING NYLON. An exclusive fiber development of major significance to the hosiery industry has just recently been announced. "Du Pont Sparkling Nylon" in 15 denier, created for high-fashion, special-occasion hosiery, makes stockings glimmer. Timed for holiday selling, the sparkling look is engineered into the structure of the fiber. It will not fade out, wash out or wear out. It lasts the life of the hosiery.

IMPROVED PRINTING OF BLENDS OF "DACRON" AND COTTON. Now fabrics of "Dacron" polyester fiber and cotton can be economically printed in a full range of shades with good fastness properties. Improved printing is achieved by a new resin-bonded pigment system developed by the Interchemical Corporation. Generally, fastness properties of this system compare favorably with those of washfast printed cottons. Extensive wear tests under severe conditions show prints have excellent durability.

*Du Pont's trademark for its acetate yarn.

**Du Pont's reg. trademark for its polyester fiber.

Enjoy THE DU PONT SHOW WITH JUNE ALLYSON, Monday nights—10:30 E.S.T.—CBS-TV.



BETTER THINGS FOR BETTER LIVING
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WASH AND WEAR QUALITIES — Vycron's wash and wear performance with lower polyester fiber content results in greater values for the consumer.



PILLING RESISTANCE — Vycron's unmatched resistance to pilling assures the consumer of better looking, longer-lived polyester apparel.



... America's Only Polyester Fiber Quality Controlled and Certified from Raw Material to End-Use by United States Testing Company, Inc.



DYE AFFINITY — Because Vycron has unusual affinity for dye color, it offers the fabric designer a more effective palette for his creative ideas.



WEAR RESISTANCE — Vycron's high degree of wear resistance shows up in the fabric and garment in two ways: greater tensile strength and greater resistance to abrasion.



STRENGTH — Vycron's general superiority in strength means better loom performance, makes possible lighter, sheerer, more serviceable fabrics and garments.



Vycron is the most advanced polyester fiber ever to achieve commercial production in America. And that position of leadership will be safeguarded by the most stringent quality control and policing program ever put behind any polyester fiber, with the United States Testing Company, Inc., acting as official scientific laboratory.

First of all, the fiber will be under a tight check-control from the moment the raw material enters our plant until the fiber itself is ready for shipment. But that, of course, is normal procedure for any well regulated manufacturing operation.

Vycron quality control goes much further! As a matter of fact, we can accurately say that we never relinquish control of Vycron quality until it reaches the consumer's hands in a finished product!

Before any mill can label its grey goods or finished fabrics with the Vycron name, the fabrics must first be tested and certified by the Testing Company against specifications. The Vycron polyester fiber content, for example, must meet our standards for the particular fabric construction in question. And all performance claims must be fully substantiated by scientific test. The same regulations apply to converters for finished goods.

But even that isn't enough for Vycron!

The Vycron fabrics in the end-use products themselves . . . apparel, home furnishings, industrial goods . . . must meet control standards before they can be identified by the Vycron name. Moreover, the United States Testing Company, Inc., will purchase these products on the open market for check-testing on a regular program basis, as long as they continue to feature the Vycron name.

That, we believe, is a quality control program that will protect the trade from mill to retailer . . . protect the consumer . . . and safeguard the reputation of Vycron as the most advanced polyester fiber in America.



DRAPING QUALITIES — Vycron's soft, pliant touch, can produce a new standard of suppleness, drapability, and luxury-of-hand in fabrics made with polyester fiber.

Vycron Polyester . . . America's Most Advanced Self-Care Fiber

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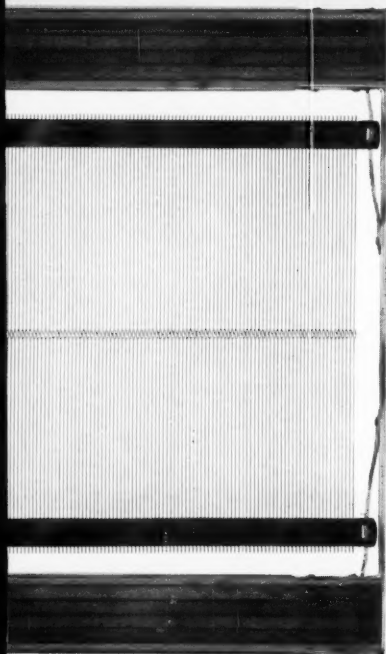
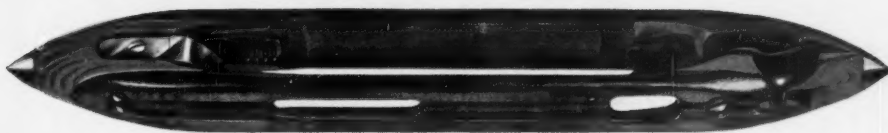
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STEHEDCO Duraweld Harness Frames are Premium Grade and guarantee longer life. Each Duraweld frame stick is a lamination of strips of carefully selected, high quality wood permanently bonded together for greater strength and stability. This assures less distortion, warping, and splintering, with greater holding power for hardware, and elimination of weak spots.

SOUTHERN Duraweld Shuttles are made of finest quality tempered dogwood end blocks, for greater resiliency and tip retention, permanently bonded by an exclusive Southern method to long wearing wall sections of laminated wood or plastic. They assure at least 100% longer life expectancy with only a very moderate weight increase.

STEHEDCO Duraweld Picker Sticks provide the unexcelled combination of greater strength and whip, plus resistance to warping. They are made of multiple laminated veneers of high grade hickory reinforced with veneers of vulcanized fiber, permanently bonded with phenolic adhesive into a uniform panel.

Duraweld Harness Frames, Shuttles and Picker Sticks are manufactured with great care under rigid Quality Control methods, and will pay for themselves over and over again with superior performance and longer life. Ask one of our qualified Sales Engineers to show how YOU can start counting your savings when you invest in DURAWELD.

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ARNEL'S "STAMPS" OF CONSUMER APPROVAL

One of the basic attributes of Arnel triacetate that has made this fiber such a singular success in the "wash and wear" and "ease of care" field is QUICK DRYING. Without question, Arnel's fast drying capability is as important to consumers as its ease of handling and processing to the mills and finishers.

After having bought a fabric made of Arnel the consumer is assured of satisfaction and of QUICK DRYING because:

1. Arnel is hydrophobic (water-hating). It is naturally very fast drying.
2. Arnel absorbs only 3.2% moisture under normal conditions, which helps make fabrics of Arnel extremely resistant to wrinkling and musing, even under conditions of highest humidity.
3. This low level of attraction for water and moisture is *not* at the expense of other characteristics. Fabrics of Arnel have a desirable hand, drapeability, good dimensional stability and wash-fastness.
4. All fabrics carrying the official Arnel symbol have been pre-tested for performance claimed—including quick drying. (Tests are conducted free of charge by the Celanese Corporation of America.)

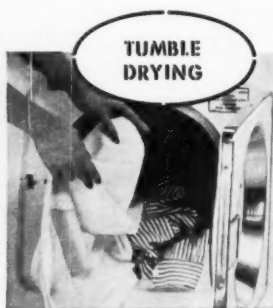
So, take advantage of the great consumer acceptance of Arnel. Let Celanese work with you to develop new Arnel fabrics. Booklets 12A, 13A and 14A, containing the important technical procedure and facts about Arnel, are available by writing Celanese Fibers Company, a division of Celanese Corporation of America, Box 1414, Charlotte, N. C.

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Export Sales: Amcel Co., Inc., and Pan Amcel Co., Inc., 180 Madison Ave., New York 16, N. Y.

In Canada: Chemcell Fibres Limited, 1600 Dorchester Street West, Montreal, Quebec

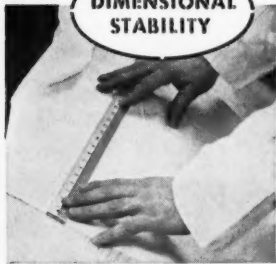


Arnel . . . a



QUICK DRYING

**DIMENSIONAL
STABILITY**



**IRONING—
NO PROBLEM**



**FABRIC
TESTING**



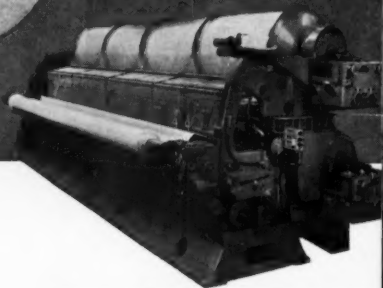
ARNEL*

*This is the official Arnel symbol—evidence that this fabric of this new triacetate fiber has been pre-tested for performance claimed.

Celanese contemporary fiber

Beautiful Tricot Fabrics

AT 800 COURSES PER MINUTE



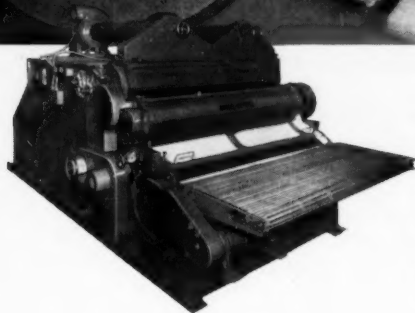
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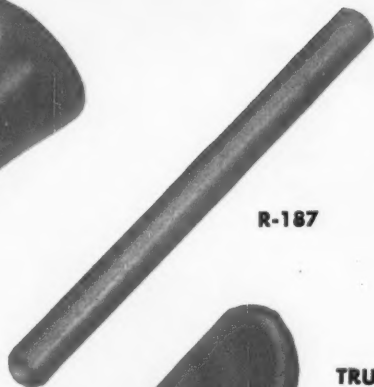
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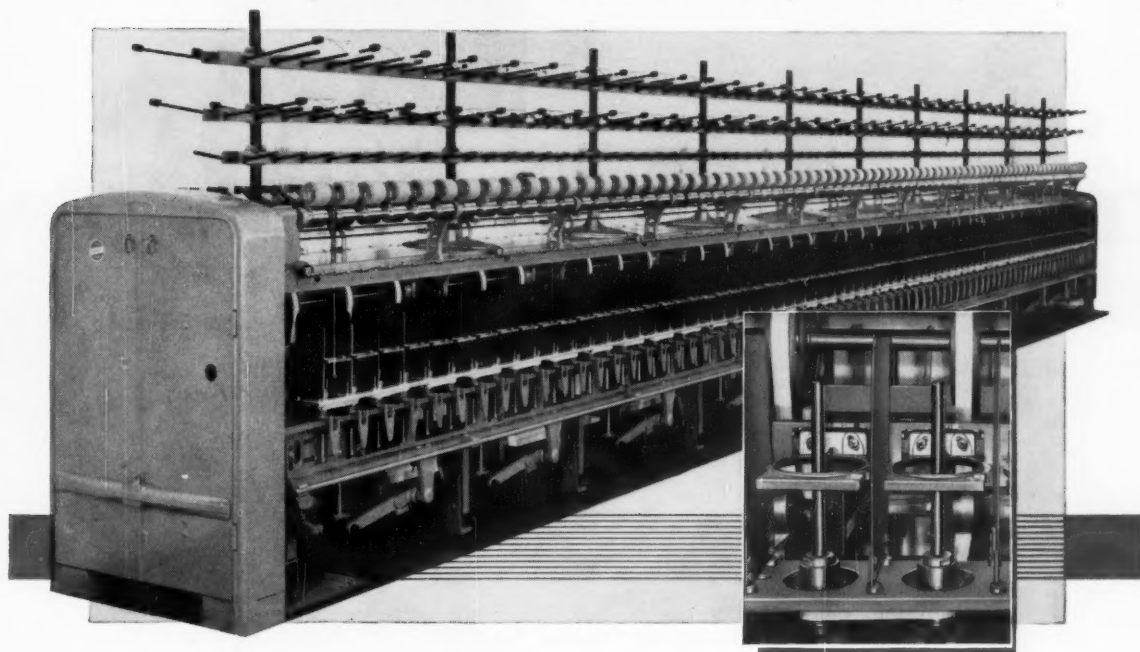
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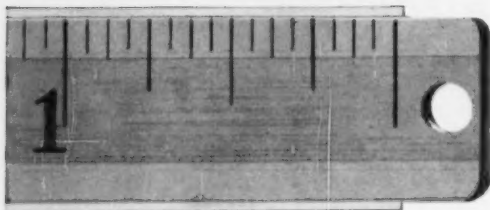
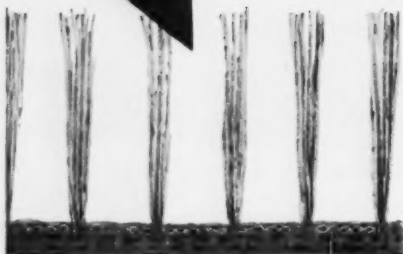
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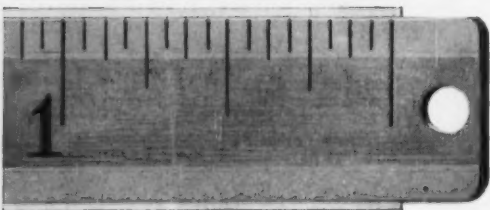
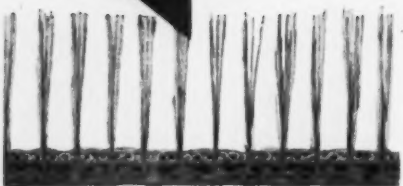


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MODERN TEXTILES

Magazine

Publisher's Viewpoint

Stop the Export of Jobs!

In recent months it has become apparent that the textile industry is no longer alone in its justified fears provoked by an increasing tide of imports from low-wage countries. Other American industries, ranging from such producers of basic industrial commodities as steel to manufacturers of complex mechanical finished products as automobiles, have voiced their alarm.

Increasing, too, is the awareness among industry and government leaders that the United States is not the only prosperous, well-equipped industrial power in the world. The strong industrial recovery of many European countries and Japan from postwar weakness and devastation—aided greatly by U.S. money and generously given technical help—is now a well recognized fact. These industrial countries are now formidably equipped to compete with the United States. And they are doing just that aided by trade agreements that give their products great advantages in our markets without corresponding advantages for our products in their home markets.

One Way Trade

All these facets of the trade problem were wisely and boldly reviewed last month in a remarkable address by Robert T. Stevens, president of J. P. Stevens & Co., Inc., at a meeting of the Textile Salesmen's Association in New York City. What is even more important, Stevens made proposals to remedy the inequitable situation of the U. S. textile industry—and other industries as well. His suggestions have the great merit of being soundly based on a clear understanding of the danger to American prosperity represented by imports.

Stevens made the important point that current U. S. trade policies do not promote reciprocal trade. What they do provide, he said, is one-way trade. And that way is one which opens our country's markets to foreign goods without providing a corresponding path for our goods into

the markets of foreign countries. *The net effect is that the United States today is exporting jobs—jobs of thousands of workers in our textile, clothing, steel and indeed many other industries.*

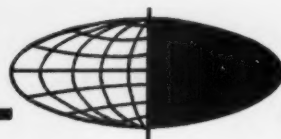
Dealing with the specific danger to the United States textile industry from a flood of products from low-wage countries, Stevens noted that imports from Hong Kong are rising sharply. He pointed out that the Japanese are seeking an increase in their cotton goods quota for next year; that wool goods imports have risen by 644% in the years between 1947 and 1958 while domestic production fell by 42%. He noted that imports of manmade fiber fabrics are also jumping at an alarming rate.

Time for a change

All these hard and harrowing facts about textile imports are convincing reasons, we believe, why we should accept Steven's suggestion that our government should reappraise "our lack of an overall policy covering all textile and garment imports."

Such a reappraisal, in our opinion, is long overdue. What is needed, we believe, is the establishment of quotas for all textile products applicable to every country seeking to export its fabrics and other textile items into the United States. Such quotas, carefully established and efficiently administered, will help preserve our vitally needed textile industry and check the export of American jobs to other countries. In this way there will be established for textile imports the "rule of reason" called for by Robert Stevens. For nothing can be more reasonable than to want to preserve our own textile industry, our own high level of employment, our own way of life.

A. J. McCallough



World Wide

BRITAIN'S COTTON TEXTILE industry appears to have been stripped down for the long competitive battle ahead. The \$84 million program has been completed. Here is what was accomplished: scrapped were 12,443,963 mule-equivalent spindles; 15,123 carding engines; 570,431 doubling spindles, and 104,747 looms. Remaining are 13.5 million mule-equivalent spindles, 1,046,000 doubling spindles and 153,000 looms.

DEFENDING UK'S TEXTILE SCRAPPING program was Sir David Eccles, president of the Board of Trade. The program has not been too severe, he said, adding "We want to see a larger production of cloth from a smaller industry." The scrapping followed original blueprints closely. Whether it succeeds will depend on existing mills' ability to modernize and convert to shift operations.

JAPAN IS ALSO SHUTTING DOWN a considerable number of its textile spindles. Kichihei Hara, chairman of the All-Japan Cotton Spinners Association, reported this to the International Federation of Cotton and Allied Industries, which met in Vienna. He cited statistics for his country's equipment curtailment. Since May, 1,255,000 of 9,022,000 cotton spindles (13.9%) were deactivated; 370,000 of 2,950,000 rayon staple spindles (12.5%); 60,000 of 1,240,000 synthetic fiber spinning spindles (5.6%); 190,000 of 1,578,000 woolen spindles (12%), and 55,000 of 595,000 worsted spindles (9.2%).

BUT JAPANESE WOOL CLOTHMAKERS have been entirely freed from restrictions, imposed in April, 1957, which had kept 20% of their looms idle. Trade leaders feel that domestic and export demand in the last quarter of the year will absorb output from all 22,000 looms in place.

WORLD TEXTILE MEETING, at Vienna, was heartened by two overall developments. These were Japan's apparent readiness to curb excessive output and the likelihood that governments would assist the trade in protecting itself against foreign competition. In some cases, the latter meant that Asian nations would be more willing to establish export restrictions on textiles.

INDIA, PAKISTAN WILL LIMIT exports of cotton textiles to Britain, starting next Jan. 1. In-

dia's ceiling under the long-sought agreement will be 175 million square yards; Pakistan's 38 million, compared with annual exports over the past three years averaging 168 million and 8 million respectively.

HONG KONG TEXTILES WORRY British as a result of the area's 115 million square yard export quota exhaustion. U. K. cotton mill men fear that demands will be strong in Hong Kong to get the quota, which started last February, repealed. The British trade has also noted colony plans for adding 20,000 cotton spindles, to bring the total to some 400,000.

A SWEDISH COMPANY HAS FOUND a new type of rayon which can be used both for filling or padding and spinning. Called Elaston, Svenska Rayon's product has been tested in blankets and pillows, where it quickly regains its original springiness. The new rayon is said to possess similar properties in knitted and woven fabrics. The Valberg firm also claimed that Elaston was largely fire-resistant.

AUSTRALIAN FIRM WILL MAKE Saran fiber under an agreement with the Japanese company, Asahi-Dow. The firm will ship enough equipment so that Universal Product Co. of Australia will be able to start with an output of seven tons of Saran fiber.

MONTECATINI IS BUILDING a new polypropylene plant at Terni. The Italian company has also decided to call its polypropylene fiber by a new name, Meraklon. (Its plastic product is called Moplen.) Montecatini's affiliate at Terni, the Polymer Co., which is constructing the new factory, plans a yearly production of 5,000 tons of staple and filament.

RUSSIA WILL BUY RAYON from Japan to the tune of 1,000 tons of yarn during the first half of 1960 plus a possible 6,000 tons of staple, if the whole deal goes through. The yarn is 100 denier.

FRENCH MENSWEAR GROUP is planning to hold a style show in the United States, possibly next year. The Association de l'Elegance Masculine Francaise, organized in 1957, has already displayed shirts, suits, leather garments, coats, socks and ties in Europe and the French overseas territories.

the many lives of

FRANK LESLIE

To be a practiced writer, a polished after dinner speaker and a veteran theatre buff are all achievements that help make Frank Leslie one of the best gray goods salesmen around.

By Jerome Campbell

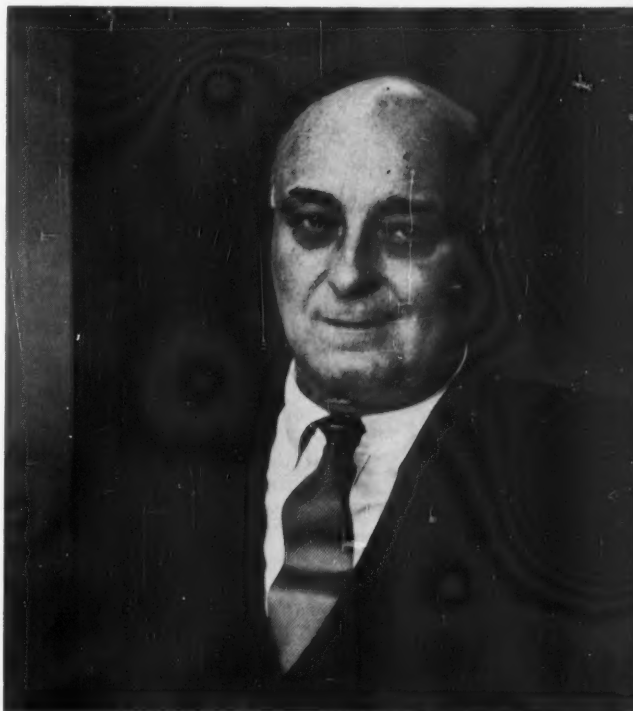
EDITOR, MODERN TEXTILES MAGAZINE

FRANK LESLIE likes to say, that judged by early training, only one man, Meyer Silberstein of Tilton Textile Corp., has a better foundation for a career in textile merchandising than himself. Silberstein, now a highly regarded converter, started out in life as a professional magician, while Leslie in his young days dabbled in a number of things that have proven only a little less useful than prestidigitation for a career of selling gray goods.

As an undergraduate at Fordham, Frank Leslie inclined heavily toward the complicated intellectual and theological sinuosities of scholastic philosophy. As a result, he is the only man selling gray goods today who has a clear grasp of the doctrine of original sin. Possessed of a bachelor's degree, he entered law school, but balanced his study of the abstractions of law during the day by a study of the realities of life as a police reporter at night for the old New York World. After taking his law degree, he soon abandoned both law and the police courts to go to Europe where, headquartered in the intensely literary Paris of Ernest Hemingway and Gertrude Stein and innumerable other American expatriates of the 1920's he devoted a great deal of his time to a subject that has been the abiding love of his life—good writing, especially the writing of such leaders of the turn-of-the-century revival of Irish literature as Yeats, Synge, Shaw and Joyce. It must be said, however, though these bright names of Irish writing were a major pre-occupation with him, his reading ranged over the whole broad universe of good literature in every age and every country. And this interest in literature is not something that was limited to the days of his youth. In spite of the exacting demands on his leisure and energies imposed by his position as president of Leslie, Catlin & Co., the largest cotton gray goods selling house in the country, Frank Leslie still finds time to read the best writing being published today. He is probably the only gray goods salesman and undoubtedly the only president of a textile marketing firm who has carefully studied the poetry of Dylan Thomas.

After knocking about Europe for a few years—years which included hard study of scholastic philosophy at Innsbruck University as well as his less arduous studies of life and literature in Paris. Leslie at the age of 24 decided that it was time for him to find some means of gainful occupation. A knowledge of the works of Aristotle and Aquinas was a hard commodity to sell; and although he liked to write and had reason to believe (from the opinion of his friends) that he wrote well, he had seen enough of writers in Paris and New York to be hardheadedly dubious of the sufficiency of the earnings of a literary career to keep a roof over his head and bread in his mouth.

So in a moment of acute sanity which he has never regretted he caught a boat home to New York and a job in his father's textile selling house. In deciding to



become a textile man, Leslie was not making a choice in the dark. In his college years he had acquired a knowledge of the basic textile manufacturing processes when he had worked in the Hart Mills in Tarboro, N. C., and at Savage Manufacturing Co. in Maryland, whose output was sold by his father's firm.

More directly and profoundly influencing his choice of a job in textiles was the fact that fabric selling was the family business. Frank Leslie's grandfather, John P. Leslie, had been a buyer of domestics for the famous old New York department store, Siegal-Cooper. His father, Henry M. Leslie, had started out at 14 as a clerk in a Worth Street selling house. At 26, he had established his own selling agency. It was this business, Leslie, Evans & Co., that Leslie joined in 1927 as a very junior salesman.

Beating the Bushes

For a few years he learned the rudiments of what he has since come to regard as the delicate and difficult art of selling gray goods by making the rounds of New York City customers and possible customers. Later, his father gave him an out-of-town territory, and Leslie learned about the geography of the middle west by personal investigation of its rail routes, its cities, and towns, some of them extremely small and painfully dull.

His selling was interrupted on two occasions by long stints as manager of the Savage Manufacturing Co.'s plant in Maryland. He not only managed this mill but kept up his selling skills by frequent trips to find customers for its output. After his father's death, Frank Leslie became the head of the firm which now included his younger brother, Henry. In 1957, the company acquired its present name, Leslie, Catlin & Co., when it took over the old house of Catlin, Farrish. Over the years the company had grown steadily; but what was perhaps its biggest forward stride occurred a few years ago when Leslie, Catlin was asked to take over selling the output of Burlington Industries' cotton mills—a yardage running from five to seven million yards a week.

The fact that Leslie, Catlin & Co. has been carrying out this tremendous selling assignment is a good measure of its importance as a selling agency. Its success in finding buyers for Burlington and the other mills in its organization is also proof, although he would be the first to repudiate this statement, of the effectiveness of Frank Leslie as a textile salesman. Few men are better known or more highly regarded in the fabric market. Later this month the esteem, the warm affection in which the textile industry holds Frank Leslie will be demonstrated to the world when he receives at a luncheon at the Waldorf-Astoria in New York City, the annual award of "textile man of the year" from the New York Board of Trade.

A Man of Many Interests

In the 32 years since Leslie came home from Paris to join his father's firm, textile selling has been his major interest. He is fond of saying in many of the speeches, for which he is in demand throughout the industry, that he is nothing more than a textile salesman and that he can think of no prouder description of himself. But despite the demands of his achievements as a salesman on his leisure and energies, Frank Leslie has pursued other interests, and in a sense other careers—interests which have enriched his life, he believes, and helped him, despite their remoteness from textiles, to be a better textile salesman.

Apart from the salesman, there are two other Leslies. He has never ceased to be what he was when he came back from Paris in 1927—a fascinated student of literature both of the past and the present; a lover of good writing in poetry and prose; a man who somehow finds time to keep up with his reading. And what is even more unusual, he has not neglected the literary impulse that moved him in his undergraduate days to write a play whose plot he can no longer remember. Although he admits it is difficult, Leslie is still a penman, a man who loves to put words on paper in ways that are original and highly readable.

In these days much of his writing efforts are limited to the witty and trenchant speeches he is called upon to deliver wherever textile men gather. During the war years, however, when he was living in Maryland managing the Savage mill, he found time to write his novel, "There's a Spot in My Heart," a story which, although not autobiographical he insists, nevertheless presents in a loving, yet ironical perspective, a glance backward at a New York childhood in those less complicated days before the first World War.

The Third Leslie

Just as the character of Frank Leslie the textile salesman overlaps by means of his carefully written speeches for textile audiences, the character of Frank Leslie the writer, so the character of Frank Leslie the writer leads to still a third aspect of the man. This is Frank Leslie, the life-long friend and intimate of actors, both famous and obscure, the devotee of the theatre—a man so deeply "in" the theatrical world that he has been chosen by actors to serve as treasurer of their own ultra-exclusive fraternity; the Lambs Club.

Leslie sees no conflict or even any great disparity in his three careers. For him, they fit together into one. A man wise enough to take life as it comes, he regards his interest in books and in writing as well as his participation in the camaraderie of actors as enriching diversions. They help him immeasurably, he believes, to carry on with the best of his abilities in his chosen profession of selling cloth.

How to Relax

"When you spend 13 or 14 hours a day" he says, "deep in the problems of running mills and selling their output, it is good to get away and turn to a book by a writer of superior imagination who, in the words of Yeats, can tell us

"Of a land where even the old are fair,
And even the wise are merry of tongue."

"Or if you are in another mood, it is wonderfully relaxing after talking textiles all day, to slip into the bar at the Lambs and have a drink with an actor who has a good story to tell and who never in his whole life heard anyone mention an 80-square and who thinks a shuttle is something that runs under 42 Street.

"If you are obsessed with your job which is selling textiles, I have found that the reading of good books and the company of actors are good ways to put textile selling in its right perspective—one of the many, many and by no means the most important, activities of mankind."

That he finds these diversions helpful and even an utter necessity is a measure of Frank Leslie's absorption in his work of selling fabrics. Since he has been

(Continued on Page 50)



If you didn't get to Italy in September

REPORT ON MILAN

Here is your guided tour of the high spots of the
International Textile Machinery Exhibition

By G. J. Bradley

MILAN—At what is said to be the largest textile machinery show ever staged, U. S. exhibitors came in for a fair share of attention here last month at the Third International Textile Machinery Exhibition. In all, some 640 machinery makers from 12 countries displayed their equipment. The greatest part of this number was made up of 220 exhibitors from Italy. West Germany was next with 176 companies displaying their wares. The representation from the United States was sixth largest with 28 exhibitors.

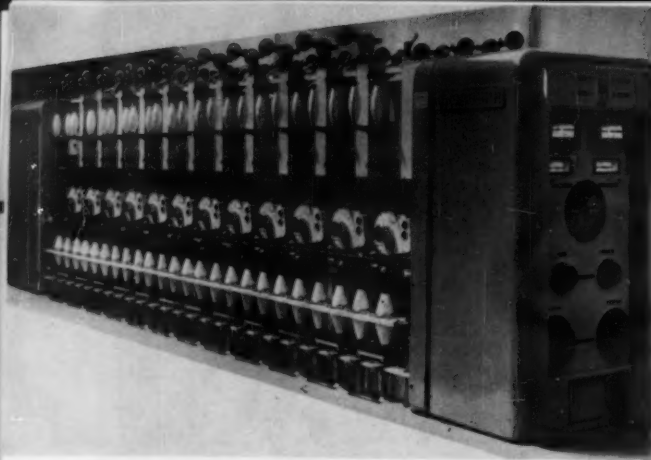
U. S. companies taking part in the big show in this modern, highly industrialized northern Italian city were greatly impressed by the mood of optimism and continued anticipation of good business shown by the thousands of textile men who crowded the exhibit grounds between Sept. 12 and 21. American exhibitors were also heartened by the fact that many sales were made right on the floor of the show.

JAMES HUNTER MACHINE Co., for instance, sold three complete Fiber Meter blending Units on the spot to one German company alone.

Another American machine builder which reported sales off the floor was WHITIN MACHINE WORKS, Whitinsville, Mass. Whitin sold 20 of its new Piedmont high speed spinning frames for delivery to a mill in the Near East. Whitin also sold 20 Super J combers and several of its Super Lap units.

WARNER AND SWASEY Co., attracted a great deal of attention with a single head pin-drafter, 3700 series, with a new longitudinal 8-ball creel delivering into dual 15 inch cans. Featuring wider pinning and close nip control on short staple, it was said to be applicable to the American, Bradford and French systems. An M-3860 dual head pin-drafter, with a can-creel delivering on to a ball, worked with one head while the other head was open for inspection.

A French company, SOCIETE ALSACIENNE DE CONSTRUCTIONS MECANQUES, showed an interesting draw-frame running at 400 feet per minute. This was the Model ER. It had two heads and was fed from outside cans. There was a positive drive to the slivers; the



On display at Milan was this E.P.I false twist unit capable of yarn speeds up to 750 feet per minute. It was developed by Hobourn Aero Components in conjunction with British Nylon Spinners.

drafting component had a 2 3/4 inch fluted front roller and adjustable high pressure device. The unit takes up to 3 1/2 inch fibers, and vacuum cleaning is provided for top and bottom rollers.

WHITIN MACHINE WORKS illustrated the super lap preparation method by the Even-Draft draw-frame, also built to operate at 400 feet per minute on carded and combed work, and the new Super Lap unit with three heads, each fed from the draw-frame by 16 to 20 slivers. In operation also was a full-length Piedmont spinning frame at 13,000 rpm spindle speed. In addition, Whitin had in its booth its Super J comb.

An Autoleveller Speed-o-Gill, by PRINCE-SMITH AND STELLS LTD., England, had a new automatic ball-doffing arrangement consisting of a self-contained balling head receiving sliver from the front rollers of the gill. The ball is built on to a permanent steel spindle. When finished it is automatically doffed; the unit then restarts. Balls up to 16 inches wide, of 20 inches diameter, are produced.

Saco-Lowell's Display

SACO-LOWELL SHOPS presented an improved Versa-Matic draw-frame, their new SJ spinning frame with the Magedraft pressure system to produce top roller pressure, and an anti-friction card coiler.

Although few major winding developments were evident, the overall picture was one of steady progress towards higher quality work, automation and slightly faster speeds. Most machinery builders claim top pirn winding speeds of about 12,000 revolutions per minute; highest cone winding speeds are generally around 1,500 yards per minute.

THOMAS HOLT LTD., England, showed the RTA Automatic Travelling Spindle Cone Winder. The rotary traverse drum on this unit facilitates much faster winding with the minimum of applied tension. Even slack dyeing packages can be wound at great speed. The company's new RTM model also incorporates a rotary traverse and is capable of producing regulated density packages. This unit had the Holt Yarnspec electronic clearers fitted.

THE ROBERTS CO. showed two Arrow frames: the 25 inch wide M1, which spins staple up to 3 inches and the WM2 for natural and synthetic fibers between 1 1/2 to 8 inch staple. Their PermaSet drafting system, eliminating roller settings regardless of fiber length, drew much comment.

A Belgian firm, ATELIERS DE CONSTRUCTION GILBOS S.P.R.L., displayed the TS-Unitron winder, which

produces warping and dyeing packages, has large grooved drums of 10 1/4 inch diameter and, the makers claim, can wind faster than 1,650 yards per minute. A reciprocating movement of the packages increases from zero to an adjustable maximum to ensure production of uniform density packages.

One surprise exhibit, a cone winder by SCHWEITER LTD., Switzerland, aroused what was probably the greatest stir in this section of the fair. The machine, Model 10, is fully automatic in that if an end breaks, it is automatically pieced; if a cone runs out, it is automatically replaced. Shown operating at about 1,300 yards per minute, the unit was only a prototype. Three similar units have been built and 50 more are under construction for mill trials over the next 18 months before the machine is marketed. An official of the company said that one operator can supervise between 32 and 90 spindles, thus tripling normal productivity. The unit was a circular machine, six feet diameter, with eight heads. Cost of production models was forecast as being approximately \$3,500.

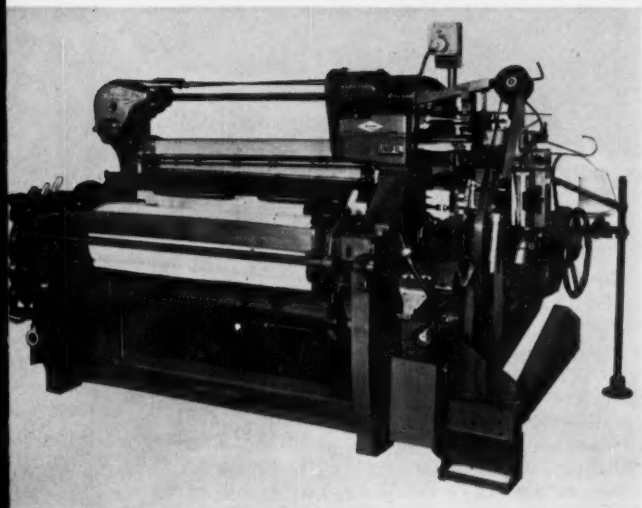
False Twist Equipment

Of several interesting yarn preparation units shown, one was the E.P.I False Twist Unit, exhibited for the first time anywhere. Developed in co-operation with BRITISH NYLON SPINNERS LTD., the machine is built by HOBOURN AERO COMPONENTS LTD. Two ends of yarn are processed together on the unit and yarn speeds of 750 feet per minute are mentioned. The unit employs a novel contact twist method. In conjunction with DEERING MILLIKEN RESEARCH CORP., the same firm showed two Agilon units, type 2086 for fine deniers and type 2110 for medium deniers. The latter unit processes up to six ends of yarn in each head. A total possible production of 970 feet per minute was claimed. A sensitive stop-motion signals individual yarn breakages, and controlled yarn speed is made possible by precision-made diametrically true wrap wheels.

BARBER AND COLMAN LTD., British associate company of Barber-Colman Co., showed visitors their 66 inch GSH Warp-Drawing Unit which draws through 22 shafts, six banks of drop wires and reed in one operation. A sectional warping plant displayed by BENNINGER ENGINEERING CO., LTD., Switzerland, had a completely enclosed drum filled with some material which enables it to withstand stresses liable to occur with synthetic fiber yarns. This drum can be moved out of the unit and brought directly behind the slaker to cut out beaming-off.

Although the SCRAGG GROUP, Britain, did have a stand, no machinery was displayed. Instead a show was held in a nearby hotel to exhibit samples of fashion garments made of synthetic yarns processed by the recently announced Astralon method. The Scragg units which carry out this process, bulking and relaxing in one operation, are so secret that only licensees who have completed all necessary papers are allowed to see them.

The process can be carried out on both polyamide and polyester yarns, and a Scragg official said successful trials have been carried out on acrylic yarns. Cost of processing is "slightly above that of the Ban-Lon operation", but whether this includes royalties is not quite clear. It was recently announced that Imperial Chemical Industries Ltd., have bought all licensing rights to the process in Britain. Scragg's are now licensing overseas producers.



Visitors to the show saw this Picanol loom equipped with Unifil loom winder in operation.

Recent developments in shuttleless looms were well represented. The DRAPER CORP.'s shuttleless loom, making its European debut, attracted much interest; the 40 inch model was operating at 250 picks per minute. According to a Draper spokesman, finishers are not unduly perturbed by the fringed and folded selvages. Some observers who spent long hours at the Exhibition studying weaving machinery on display reported that the Draper loom was one of the items that drew the heaviest crowds hour after hour.

A shuttleless loom built by AUGUST ENGELS G.M.B.H., Germany, was weaving a wider fabric with an eight color filling. Called the Greiftex loom, this prototype was producing only a coarse fabric. It is being built under license; the French inventor, M. Dewas, intends to license builders in other countries. In the loom, flexible steel tapes introduce the filling from each side of the shed. The fabric, like that from the Draper unit, has fringed and tucked-in selvages.

Spanish Shuttleless Loom

Yet another shuttleless loom came from Spain. This was shown by MAQUINARIA TEXTIL DEL NORTE DE ESPANA S.A., again being built under license. Filling is inserted by a clip travelling across the shed and a type of Leno motion locks the ends into the selvage, leaving a tiny fringe on each side of the fabric. These looms are built to give 8, 12 or 15 color selections, and single picks can be inserted when required. According to the builders, the constant circular motion of the picking mechanism ensures smooth vibrationless running of the loom.

An improved Maxbo loom drew a steady crowd. This Swedish unit, by AKTIEBOLAGET MAXBO, was weaving a 48 inch cotton print fabric of fair quality at 328 picks per minute, using the extraordinarily quiet air-jet principle. The loom is to be built by Southeastern Loom & Machine Works in the U. S.

A new needle loom for tapes and elastics up to 1 1/4 inches wide was shown by CROMPTON AND KNOWLES CORP. This unit produces two pieces side by side continuously. Weft carriers draw yarn from cones and insert two picks in each shed. These picks are locked in position by single knitting type needles. A spokesman said similar looms are operating in the U. S. at

speeds up to 1,400 sheds per minute on a variety of fabrics.

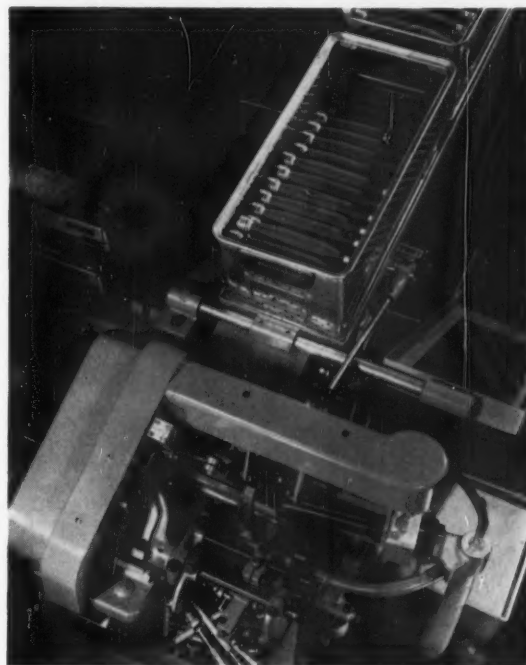
METIERS AUTOMATIQUES PICANOL S.A., Belgium, showed a variety of looms, including their President models. This company is now making strong effort to market their units intensively throughout Europe and North America. (Editor's note: Saco-Lowell Shops, Boston, Mass., recently concluded an agreement with Metiers Automatiques Piconol to sell Picanol looms in the United States and Canada.)

The high-speed automatic looms shown were of several types, and arrangements have been made with both LEESONA CORP., formerly UNIVERSAL WINDING CO., and GEORGE FISCHER LTD., Switzerland, to enable Picanol to offer Unifil Loom Winders or Fischer Automatic Bobbin Loaders as optional attachments.

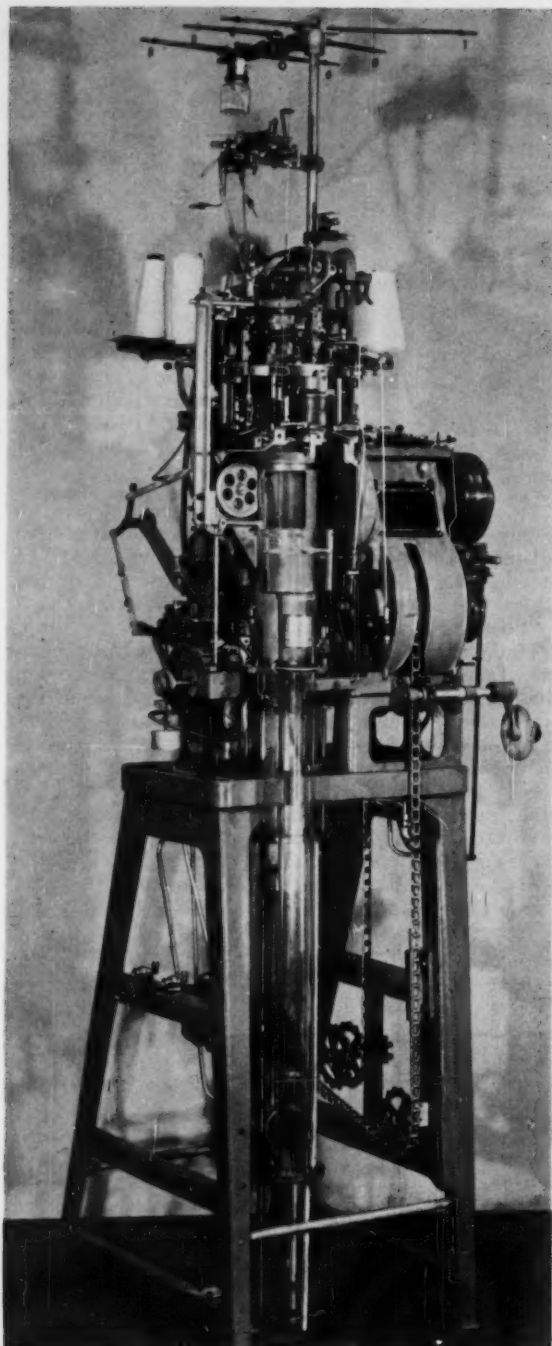
Loom Winders vs. Box Loaders

This pin-pointed one of the most common topics among weavers attending the exposition: the relative advantages of box-loaders and loom winders. Many of the looms shown can be supplied with one or the other fitted, and some, like Picanol looms, with either.

The eager acceptance of the advantages the Unifil Loom Winder has to offer was obvious at the exhibition. Looms by Northrop, Picanol, Rüti, Saurer and Giani had them fitted. But in Europe interest in the box-loader technique is also strong. The George Fischer Automatic Bobbin Loader ALV, which was demonstrated, works as follows. Pirns, wound with a nose bunch, move by gravity from large containers to the preparation and change station. All preparatory operations on the pirn for the next change are controlled by pneumatic means. The nose bunch of the pirn is stripped and the end passes into a suction nozzle to be clamped. The ends of both old and new pirns are now positioned in the same manner as used on a normal pirn changer, and the loaded pirn is transferred to the shuttle in the usual fashion. A



George Fischer box loader displayed at Milan.



Scott & Williams, Inc., demonstrated this hosiery knitter.

temple cutter combined with the suction nozzles ensures elimination of lashing-in.

Drawback of the Fischer method is that the necessary pneumatic and ancillary equipment involves substantial capital expenditure. A similar but cheaper type of box-loader was shown by WEBSTUHLBAU FRITZ ROSCHER O.H.G., Germany, and another type which does not require nose bunches on pirns was shown by a Swedish company, TEXO AB. ADOLPH SAURER A.G., Switzerland, demonstrated a box-loader system with a mechanical method of yarn end collection. RUTI (MASCHINENFABRIK) A.G., Switzerland, exhibited a unit in which filling magazines or clips

are stored in a turret over the loom. As the magazine feeds the loom, it can be re-filled.

(Editor's Note: H. J. Theiler Corp., Whitinsville, Mass., arranged at the show to sell the Ruti loom in the United States.)

One weaving expert visiting the fair forecast that eventually the loom winder will oust the box-loader from filament weaving, and that the box-loader will maintain a lead in the field of coarse and spun yarn weaving.

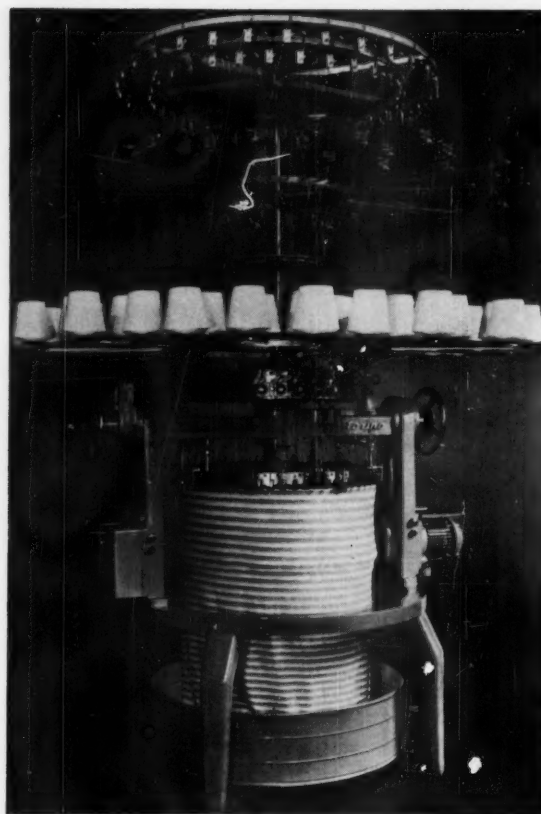
Knitting Machinery Shown

U. S. hosiery units, such as the Model KN single feed machines and the Model AMF machine (capable of producing a hose in eight minutes), shown by SCOTT AND WILLIAMS INC., came in for close inspection. SUPREME KNITTING CO. INC., showed their SAAF/C automatic striping unit and the Model BR/W high-speed outerwear fabric machine. A modern Raschel unit was displayed by WALTER KIDDE G.M.B.H., German subsidiary of Kidde Textile Machinery Corp.

A Swiss company, SCHAFFHAUSER STRICKMASCHINENFABRIK, showed a new automatic power flat machine with a stitch transfer and jacquard attachment. A circular machine for knitting nylon and metal sponges was displayed by AMINEAU FRERES S.A.R.L., France; and a unit for curtain net production, the Liba-Textor Jacquard-Raschel unit, employing one or more jacquard mechanisms according to the pattern, was shown by LIBA MASCHINENFABRIK G.M.B.H.

An Italian company, GIOVANNI MARCHISO AND CO., demonstrated a plain jersey unit, Type CR/ZM,

(Continued on Page 46)

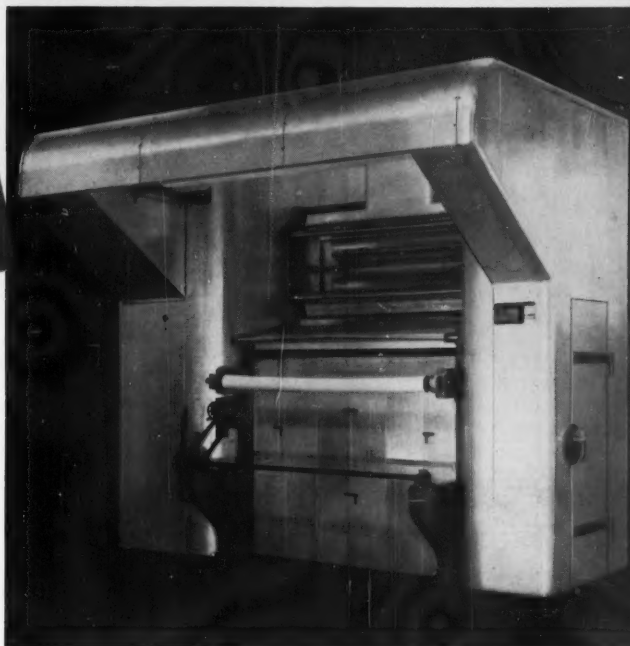


For plain jersey knitting Italy's Marchiso & Co. displayed this machine.

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New wet processing trends

Last month's AATCC meeting heard reports on progress in wash-wear, blends finishing, and dyeing equipment

LAST MONTH the nation's capital became for three days the capital of the dyeing and finishing industry of the United States and Canada. More than 1500 members and guests of the American Association of Textile Chemists and Colorists crowded the huge Sheraton Park Hotel to attend the Association's national convention.

Main events of the big meeting were three symposia devoted to currently important aspects of textile wet processing technology. An exhibit hall where some 32 companies displayed their products and services for the dyeing and finishing industry added color and variety to the convocation of dyeing people from all over the United States and Canada.

The major topics of the three symposia were new developments and problems in wash and wear fabrics; a discussion of the dyeing and finishing of blends, and a series of reports on new dyeing and finishing processes.

Paul B. Stam, Jr., of J. P. Stevens & Co. led the meeting devoted to wash and wear fabrics. Abstracts of the papers read by participants in this symposium follow.

Consumers' Reaction to Wash-Wear

By G. M. Smith
Sears, Roebuck & Co.

IS THE AVERAGE CONSUMER satisfied with wash-and-wear merchandise? Returns to the retailer show that she is, but in talking to individuals we hear varying opinions of dissatisfaction. The average consumer has accepted wash-and-wear even though she is not completely satisfied with its performance.

Many people cannot believe that some things are wash-and-wear; therefore, much merchandise that has a wash-and-wear claim is not laundered but dry cleaned.

Home sewers complain that resin finished cottons are off-grain and it is almost impossible to straighten the grain before cutting out the garment. Fabrics are often stiff, hot and uncomfortable.

The biggest disappointment among users of wash-and-wear merchandise is that the fabrics do not seem to meet the claims made for them. But, of all the complaints received, none are for this reason. Individual consumers say that "wash-and-wear requires separate treatment;" "labels are misleading;" "drip drying is a nuisance". The average consumer does not like to puddle things out by hand. She would rather combine her laundry and put it in a washer. But it is inconvenient if a few wash-and-wear garments have to be handled individually. Many a customer may not be able to follow instructions because she does not have the kind of equipment suggested on the hang tag.

Chlorine retention is a problem that has been decreasing gradually. It has become much less prevalent in the men's shirt field recently although it is still apparent in women's blouses and uniforms.

Many users are still complaining about the decreased wearing qualities of wash-and-wear cottons. The durability of the finish has also been a problem because some do not perform beyond a few launderings.

The customer's opinion on wash-and-wear may be biased by poor performance due to garment construction even though the basic fabric has a good appearance. Therefore, fabrication should hold some interest for this group. Puckering of seams, use of findings, trimmings and interfacings that do not have the same wash-and-wear properties as the fabric can ruin the whole garment. If interfacings shrink more than the outer fabric, that area will appear wrinkled and be without the smoothness associated with a good wash-and-wear fabric.

Many advances have been made in basic fabric construction so that the resin finishes could be applied satisfactorily. Beyond that the chemical manufacturers have developed new resins; the finishers have learned how to apply them and many garment manufacturers have developed new techniques for sewing. Even some advertising claims have been tempered so that the customer is not "oversold".

Consumers are looking for good wash-and-wear garments and are hoping that each item they buy will have better performance qualities than the last.

The "built-in" wash-and-wear performance of fabrics made from hydrophobic, thermoplastic fiber blends with cotton has reached a level of customer acceptance such that additional advances must come through subtle, incremental improvements in blends, construction and finishing, or through advent of a new fiber. Incremental improvements can be obtained, for example, through substituting rayon for cotton as a blending fiber with Dacron. Such improvements require investigation of a large number of variables, and require sharper methods for assessing progress.

As a result, techniques have been developed for making and testing optimum small-scale fabric samples which reliably predict wash-and-wear performance of their broad-woven analogs. A more fundamental problem, that of objectively measuring fabric wrinkles, has been solved by a new application of an established principle involving low-angle light projection. A slit of high intensity light when cast onto a fabric an exaggerated contour line of the fabric surface. This line can be analyzed manually or electronically to give an index of fabric wrinkling which is in excellent accord with subjective evaluations. It also has other applications such as determin-

ing the ability of coloration and surface texture to mask fabric wrinkles.

Wash-Wear Wool Fabrics

By J. F. Krasny and John Menkart,
Harris Research Laboratories

WOOL HAS MANY POINTS in its favor in apparel use: comfort, pleasing hand, tailorability, sewability, and resistance to stains. It would be desirable to combine these advantages with the "easy care" or "wash-and-wear" requirements of modern living. The present paper is an attempt to show where wool stands at present in the "wash-and-wear" field, and what problems need to be overcome for further progress.

The first stage of the study was an examination of the behavior of a wide range of commercial wool fabrics in modern home washing. Methods of evaluating the effects observed had to be developed, and will be described.

Wool fabrics have a tendency to shrink by felting when subjected to mechanical action while wet; however, the recent models of washing machines which have settings for mild laundering to accommodate "modern fabrics" produce little shrinkage in compact wool fabrics even without a non-shrink finish. Such fabrics do not shrink to any serious extent in tumble drying, either. Most wool fabrics exhibit remarkable absence of muzzing and wrinkling after washing and tumble drying—i.e., they have a high "wash-and-wear" rating; however, in certain constructions, there is a tendency to form surface fuzz.

A range of wool fabrics—all fairly compact, and in medium and heavy weights—has been shown to be "wash-and-wear" without any special treatment. A series of fabrics has been constructed to study the effect of structural factors in detail. Preliminary results indicate that in lighter, more open structures, shrinkproofing and setting finishes, as well as proper construction, will be needed in order to obtain full "wash-and-wear" properties.

Wash-Wear Cellulosics

By A. B. Hilton, G. V. Lund, & A. E. Martin, Jr.,
Courtaulds (AIA.) Inc.

THE PREVIOUS HISTORY of wash-and-wear reveals a multiplicity of methods and instruments for ranking and predicting wash-and-wear performance and the relation between such requirements and physico-chemical measurements. There will be a discussion of fundamental fiber and yarn and fabric properties which the authors have found useful in wash-and-wear studies. For cellulosic fibers, water imbibition, elastic recovery, elastic moduli, and crease recovery, as well as the usual shrinkage tests, have been of varying usefulness and have exhibited partial correlation with wash-and-wear as tested by subjective evaluations.

Using the properties mentioned above, the wash-and-wear behavior of cross-linked cellulosic fibers in blends with acrylics and polyesters is described and compared with crease resistant finished rayon and cotton. Definite differences observed in bulk and in hand will be discussed and related to appropriate end uses.

Also, the basic properties of a medium tenacity, high wet modulus cellulosic fiber will be elucidated and some indication given for its potentialities in the field of wash-and-wear.



SEEING IS BELIEVING—Rayon wash-wear drapery fabrics made from Industrial Rayon Corp.'s new yarn were washed and dried at a demonstration at AATCC's convention. The new rayon draperies, designated 300 WH, need no ironing.

Wash-Wear Garments in Laundering

By P. B. Mack, M. Barra, A. Muller & E. F. Thomas
Texas Women's University

FORTY-TWO TYPES of garments sold as having "wash-and-wear" characteristics were used in a study of their laundering behavior. Hand washing, laundering in an automatic home washing machine, and power laundering methods were used. The garments consisted of children's slips, children's play clothes, women's slips, women's dresses, men's shirts, and men's work clothes.

The following types of fabrics were included: cotton, nylon, Dacron, cotton and Cupioni, cotton and nylon, cotton and Dacron, cotton and Arnel, and cotton and Kodel.

Following each laundering, the garments were rated by a panel of textile specialists according to a four-classification scheme on each of two basis: (a) the appearance of the fabric; and (b) the appearance of the seams and other stitching. In the garments which were hand-washed or laundered in an automatic home washing machine, the rating on the appearance of the fabric tended to surpass that on the appearance of the seams and other stitching. In the garments which were power laundered by a method similar to that used in a commercial laundry, the seams and other stitching tended to outrank the fabric.

The ratings given by the panel for appearance of the fabric tended to become somewhat better for the garments which were hand-laundered and those washed in an automatic home laundry machine, with increased numbers of launderings, whereas the appearance of the seams and other stitched areas tended to become poorer for fabrics laundered by these two methods. Garments given the power launderings, on

the other hand, tended to become poorer in ratings on the appearance of the fabric, and better on the appearance of the seams and other stitched areas as the number of launderings increased.

After each fifth laundering, the garments were touched up with a hand iron, with careful measurement of the length of time required to bring the garment to a specified appearance standard. The time required in the various cases differed, although in all cases it was far less than the time which would have been needed for the ironing of an equivalent untreated garment.

Chlorine retention tests were run on all of the fabrics before laundering, and some were found to be chlorine-retentive. Periodic breaking and tearing strength tests were made on the fabrics, which displayed marked differences in strength retention on repeated launderings. Tearing strength tended to be more amenable to loss than breaking strength.

The study has shown broad differences in the laundering performance and retention of strength in the fabrics of garments sold as having wash-and-wear characteristics.

The merit of some of the fabrics, including those blended of more than one fiber, and of some of the fabric finishes was such as to indicate superior wash-and-wear laundry performance, whereas others were not satisfactory in various respects. There were no lines of demarcation between the laundry behavior of cottons, of blends of cottons with man-made fibers, or of non-blended man-made fibers, because there were some fabrics in each category which gave excellent results.

In next month's issue we shall publish the abstracts of papers presented at the remaining two symposia: one given over to progress in blends finishing; and another devoted to new developments in dyeing processes.

For the DYER and FINISHER

New Resin Binder

Rezsol 1460 is a new resin binder by E. F. Houghton & Co. for sizing Dacron-cotton warps. The new polymer is supplied as a liquid which can be added without special precautions when the size is prepared. Its reported advantages are kettle cost reduction, reductions in seconds and shedding, improved separation, and up to 100 more yards of warp per beam. Houghton has a data sheet that includes shipping instructions. *For a copy, write the editors.*

Dialdehyde Starch

A new dialdehyde starch called Sumstar is being evaluated for textile industry uses and other industrial applications. It is a fine powder, almost colorless, non-volatile, odorless and of low acute toxicity. It was originally developed by the U. S. Department of Agriculture's Northern Research and Development Division and has been refined and adapted by Miles Chemical Company. In textiles, the chemical is expected to provide resistance to both shrinkage and creasing by serving as a cotton cellulose cross-linker. *For further information write the editor.*

New Pigment Prints

The Color & Chemicals Division of Interchemical Corp. has announced new Aquaprint Supra Colors and Clears and Aquaprint Reactor, two improvements which provide pigment prints of excellent fastness to severe washing and both wet and dry crocking. Interchemical explains that the Aquaprint Supra Colors and Clears are formulated with reac-

tive binders. It describes the Aquaprint Reactor as a concentrated solution of an organic chemical which, under proper conditions of dry or wet heat, functions as a cross-linking agent between the reactive binders present in printing emulsions made with Aquaprint Supra Colors. *For further information write the editors.*

New Starch

A new high-density starch in granule form has been developed for the textile industry by Corn Products Co. Its advantages, say the makers are: it is 40% more dense, hence will reduce record-keeping, handling costs, number of deliveries and storage space required; it is more uniform in particle size, moisture content and pH, permitting faster paste mixing and superior sizing; because it resists bridging or caking, it is more easily conveyed and dumped from hoppers; it has high resistance to abrasion and is less fragile than existing textile starches. Furthermore, the producers say it provides better slasher control and improved weaving performance. *For more information write the editors.*

Mitin-Mothproofed Sweaters

Two sweater manufacturers are offering fall lines that feature permanent mothproofing with Mitin, product of Geigy's Dye-stuffs Division. Colebrook Knitwear, Inc. features it in a line of "Back To School 1959" sweaters that includes 22 new styles under the "Angolamb" label. Greenbarr Knitwear Inc. features six styles of mothproofed "Lambgora" sweaters which contain 70% imported lambs wool, 20% angora and 10% nylon.

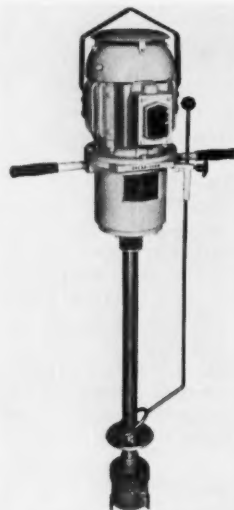
New Insect Immunizer

An entomologist at the Univer-

sity of California has developed a new way of giving fabrics lifetime immunity against textile-destroying insects. It is a colorless, odorless, harmless (to humans) compound with which fabrics can be impregnated during the vat-dyeing process or which can be applied in an aqueous solution to fabrics in the home. It neutralizes the vitamin B nutrient found in textiles—particularly soiled ones—on which carpet beetles, clothes moths and similar insects subsist. *For further information write the editors.*

Industrial Mixer

Gabb Special Products is marketing a new portable model RL shear-flow industrial mixer. The mixer's new RL hi-shear head consists of two rotating impellers and two stationary stators enclosed within a cylindrical housing to provide fast, effective and economical dispersing, blending and homogenizing. All parts subject to immersion are manufactured of stainless steel and corrosion resistant materials. *For further information write the editor.*



Gabb
Industrial
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CUSTOMER BULLETIN

Customer satisfaction has prompted Geigy to further expand and modernize its facilities so that now it has nine ideally located laboratories, enlarged branch storage facilities — enabling prompt delivery and technical assistance within reach of all textile plants.

★ Increased facilities at Charlotte completed July, 1959 and planned for Chicago & Philadelphia early in 1960.

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Follow these pointers in processing

ORLON TOW ON TURBO STAPLER

By J. E. Norton, R. S. Smith & A. T. Twing, Jr.

THE DU PONT CO.

YARNS from Du Pont Orlon acrylic tow processed on the Turbo Stapler have reached exceptional levels of acceptance in many types of knitted outerwear. Their bulk, soft hand, and good cover provide many opportunities for additional uses.

To insure maintenance of uniform shrinkage necessary for these applications, careful control must be maintained over the four variables of the Turbo Stapler process which affect yarn shrinkage—heating, drawing, cooling, and machine speed. What follows is a brief discussion of methods of controlling these variables.

Heating and Drawing

As the Orlon tow enters the stapler, it is first drawn, an operation which imparts high shrinkage to the fiber. To facilitate drawing, the tow is heated as it passes between two electrically heated metal plates in the draw zone. Plates with transverse or longitudinal heating elements both do a good job of heating the fiber.

Accurate control of heater plate temperature is essential for good drawing performance. Fenwal Corp.'s control systems do a good job of providing uniform heater plate temperatures. To insure accurate performance, they should be calibrated periodically with a portable potentiometer. When the machine is stopped, the heater plates should be opened to prevent scorching of the tow.

At a 1.58 stretch ratio, Orlon acrylic tow processes best at heater plate temperatures between 260 degrees F. and 300 degrees F. At the lower end of this range stretching is more difficult, and partial or complete tow breaks in the draw zone, as well as severe breakage of individual fibers, may occur.

At temperatures near 300 degrees F. the processability of the tow in the draw zone is improved. However, at these higher temperatures, shrinkage is lower, as shown in Figure 1. In practice, heater plate temperatures in the middle of this range have been found to give a balance between processability and yarn shrinkage requirements. Temperatures should not vary more than plus or minus five degrees F. to maintain good control of yarn shrinkage.

Effect of Draw Ratio

Draw or stretch ratio is another of the factors which influence yarn shrinkage. The higher the draw ratio, the greater the yarn shrinkage when other factors are held constant. This relationship is illustrated in Figure 2. While it would appear that maximum yarn shrinkage could best be obtained with a 1.78 draw ratio, breaking of the tow in the draw zone frequently becomes troublesome under these conditions. To obtain satisfactory processability with acceptable shrinkage, a 1.58 draw ratio is recom-

mended for all denier tows except one and two denier per filament tows, for which 1.39 and 1.48 draw ratios, respectively, are preferred.

Cooling

Drawing imparts high shrinkage to Orlon acrylic tow. This is preserved by cooling the tow in a stream of air as it emerges from the draw zone. By cooling the tow at this point, sliver quality in later stages of the Turbo Stapler operation is also improved.

Many different types of equipment may be used to cool the tow as it emerges from the draw zone. Latest models of the Turbo Stapler are equipped with a blower which directs air up through the cascade roll section at the exit end of the heater plates. On older machines, household fans may be mounted near the cascade rolls to direct air on the tow as it passes over them. To improve cooling further, refrigerated air may be directed to the cascade roll section. In all instances, two factors are of primary importance in determining the effectiveness of cooling: (1) temperature of the cooling air; (2) quantity of the cooling air. The lower the temperature and the greater the quantity of the cooling air (without disturbing the tow bundle), the more effective the cooling.

Measurement of Cooling

Consistent and uniform cooling of the drawn Orlon acrylic tow is essential to the preservation of uniform yarn shrinkage. One of the best ways of determining the amount of cooling being obtained is to measure the

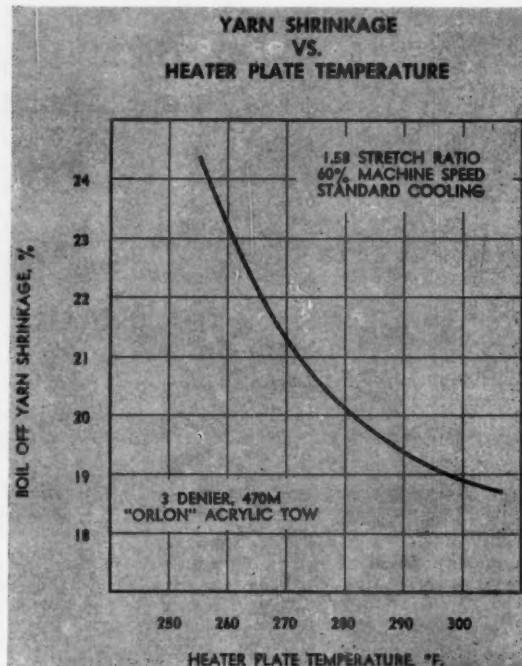


Figure 1

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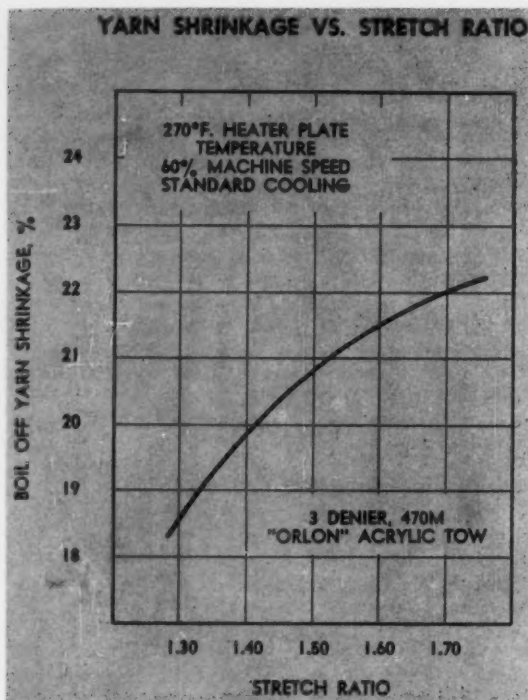


Figure 2

temperature of the top intermediate roll immediately after stopping the machine. This can be done with a surface pyrometer such as the Cambridge Instrument Co.'s Model R.

To insure uniform yarn shrinkage, roll temperatures should not vary more than five to ten degrees F. when measured in this manner. For maximum shrinkage consistent with good performance, top intermediate roll temperatures should be 140 degrees F. or below. Periodic checks of top intermediate roll temperature, recorded in chronological order on a form for permanent reference, assist in maintaining good control of this important variable.

Effect of Cooling

When machine speed, heater plate temperature, and draw ratio are held constant, more effective cooling results in the preservation of higher Orlon yarn shrinkage (see Figure 3). Cooling provides an excellent method of maintaining uniform yarn shrinkage when other factors affecting shrinkage are changed. For example, if heater plate temperatures were raised, shrinkage would normally decline. This decline can usually be offset by additional cooling, thus maintaining a uniform level of yarn shrinkage. This is but one illustration of the manner in which the four variables affecting yarn shrinkage are related. Other equally practical applications of this relationship are in constant use by alert mill management.

Machine Start-up

Following a machine shutdown, Du Pont Orlon acrylic tow entering the breaking zone has a lower temperature than after the machine has been running, due to cooling of the roll surfaces. Unless otherwise corrected, yarn shrinkages will be correspondingly higher (up 5% in some cases). To eliminate the effect of this variable on yarn shrinkage, several steps may be taken:

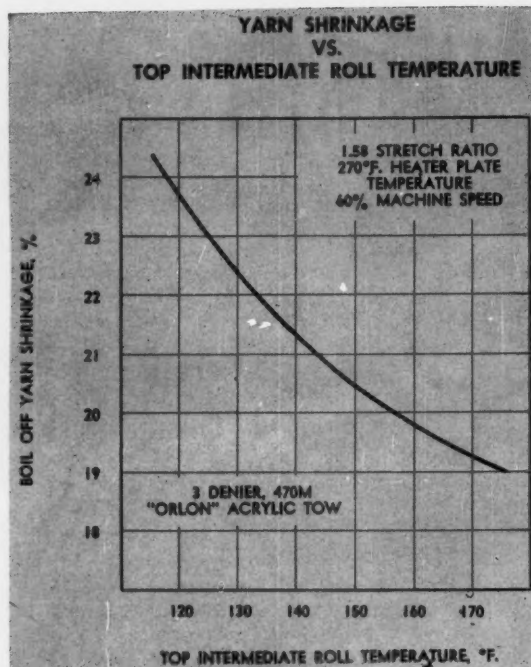


Figure 3

1. Tow processed through the machine after a shutdown may be diverted to the Turbo Fiber Setter as the relaxed (low shrinkage) portion of the yarn. When measurements of the top intermediate roll temperature show that equilibrium (no change through successive readings) temperatures have been reached, the sliver may then be left unrelaxed.

2. The time necessary to reach these equilibrium conditions can be shortened considerably by omitting all cooling during machine start-up. When the top intermediate roll reaches equilibrium temperature, as determined by the surface pyrometer, cooling may then be started and sliver diverted from the Turbo Fiber Setter.

(Continued on Page 58)

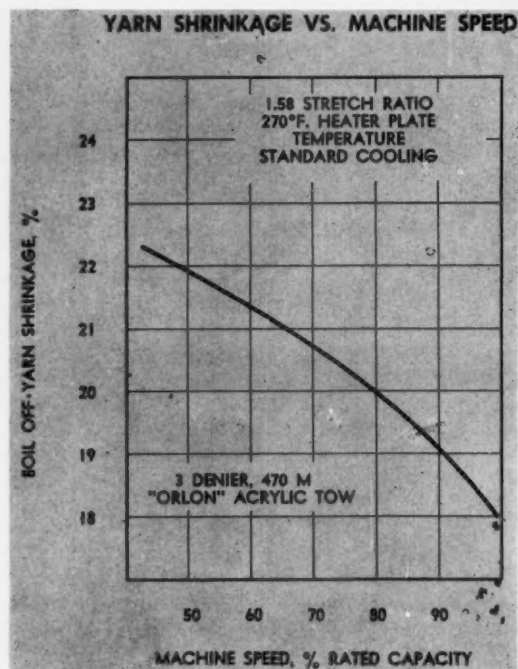
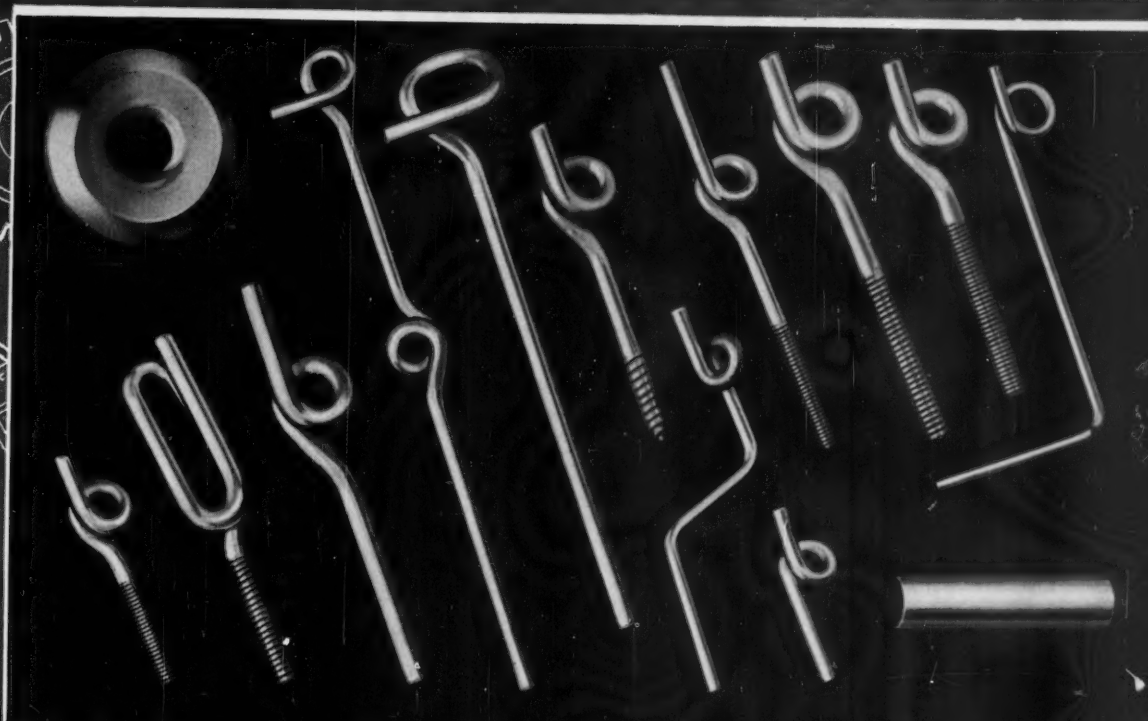


Figure 4

MACHINERY and EQUIPMENT

SECTION



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NEW

MACHINERY EQUIPMENT



Lindly Electrotense

Lindly & Co., Inc., has announced that several new models of its Electrotense have been designed and put into production. These newer units, models 413 and 414, cover a range of tensions from almost 0 to over 100 grams, depending on type and size of yarn and other factors. Tire cord, rubber, glass and carpet yarns are some of the special applications of these high tension models, in addition to conventional use on any cotton, wool and synthetic yarn in heavier deniers. The models are reported to provide uniform, even and easily controllable yarn tension. For further information write the editors.

No-Stretch Plastic Belt

J. E. Rhoads & Sons no-stretch plastic belting has many applications in the textile industry, replacing leather, rubber and woven tapes. The all-synthetic belting, called Texalon, is used for power transmission as spindle tapes; on knitting machines; shears; winders; wool pickers, and other machines. The flat ribbons of extruded nylon are highly elastic and free from stretch. The belts lengthen under load but when the load is removed return to their original length or tension. For further information write the editors.

Shuttle Truing Machines

The Stehedco shuttle truing machine, manufactured and marketed by Southern Shuttles Division, Steel Heddle Mfg. Co., is capable

of working wood, fiber and plastic shuttles accurately. Steel Heddle reports the machine is the simplest way of assuring square shuttles and shuttles perfectly matched for multiple-box work. The machine performs the following operations: sizing and squaring walls; matching shuttles; renewing thread and renewing bottom grooves; cutting feeler slot; equalizing tip location—end to end and from bottom; beveling shuttles to desired angle; cutting threadcutter slot, and grooving for fur lining. For further information write the editors.

Temperature Regulator

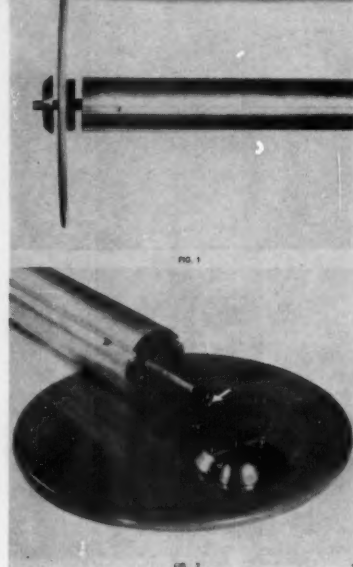
Barber-Colman Co. is marketing its VU 82 temperature regulator for proportional control of water, gas or low pressure steam.



The regulator is designed for all applications where a self-contained value assembly may be particularly suited. The regulator has a clearly marked calibrated adjusting dial for precise control, a rugged electric industrial motor operator, and armored capillary tubing. For further information write the editors.

Improved Jack Spools

Lestershire Spool Division of National Vulcanized Fibre Co. has announced a new jack spool, called Lock Eze, for carded wool yarn processing. Its head design incorporates vulcanized fiber inserts which serve as locators and prevent heads from turning. They



Lestershire's Lock Eze

also function as shock absorbers, maintaining the tightness of the spool, yet providing adequate resilience to absorb sudden bumps or drops without loss of spool concentricity. The heads can be repaired with standard parts. Lock Eze jack spools are available in lengths of 33 to 72 inches with head diameters ranging from 5 to 12 inches, for use with any type of carding machine. Special sizes are also available for unusual applications. For further information write the editors.

Heavy Duty Railway

Birch Brothers, Inc.'s heavy duty railway sewing machine is designed primarily for joining the ends of heavy carpets and rugs up to 18 feet wide but will handle other heavy wide materials equally well, according to the company's circular describing the equipment. The circular also describes its carpet portable sewing machine. For a copy write the editors.



American Textile Machinery
Exhibition - International

Parade of Progress

ATLANTIC CITY, U.S.A.
MAY 23-27, 1960

BONDYNE

BLENDS

a marketing

success

story

by the Editors

A NOTEWORTHY achievement in combined fabric manufacturing and marketing has been the successful development and broadening acceptance of Bondyne fabrics. Introduced in 1957 by Greenwood Mills, the Bondyne construction combines Dynel, Union Carbide's modacrylic fiber with other fibers to yield cloths with a high degree of wrinkle resistance and crease retention as well as other desirable easy care features. An important aspect of the success of Bondyne fabrics is that they fit into medium price brackets and are therefore especially appealing to garment manufacturers producing popular-priced high volume lines.

Currently 22 mills have been licensed to produce Bondyne fabrics for such varied end uses as slacks, suitings, rainwear, sport shirts, dresses, blouses and work clothing. Bondyne garments are being cut for men, women and children.

So rapidly has acceptance of Bondyne constructions snowballed that Greenwood Mills, happily overwhelmed with work to keep up with the rush to get licenses, not long ago set up a separate wholly-owned subsidiary, Bondyne Associates. The new firm handles licensing, advertising and promotion for Bondyne cloths.

The essential characteristic of Bondyne fabrics is their thermopliability, derived from the Dynel fiber content. This receptivity to heat enables the fabrics to be subjected to a heat-setting process which imparts durable properties of press retention and wrinkle resistance.

An important consideration in an analysis of both the growth and potential of the Bondyne program is the licensing agreement. The mills produce Bondyne fabrics under the auspices of 6 licensees. These fabrics are in turn sold by leading national converters to over 50 cutters throughout the United States and Canada. With several new licensees under considera-



NEAT BUT NOT GAUDY—Dad and lad are wearing slacks cut from Greenwood Mills' Bondyne cloth of blended Dynel, rayon, acetate. They can be machine-washed, drip dried and touched up with iron.

tion, the selling houses presently in the program are Reeves Bros. Inc., McCampbell & Co., Greenwood Mills, Inc., Opp Kory Textiles, Frank Ix & Sons and Bruck Mills Ltd.

The licensing agreements have given the Bondyne fabric program a broad scope by creating a variety of styling possibilities and construction ranges, with each mill producing fabrics for which it is best equipped.

The latest development in the Bondyne program is the recently announced group of fine yarn fabrics which will consist basically of 70% American Viscose's Avron high strength rayon and 30% Dynel. This construction permits for the first time the production of sheer fabrics, and is expected to have acceptance in the women's wear field for finer dresses, blouses, skirts and slack fabrics.

The impressive achievements of the Bondyne fabric program is brought home by a consideration of the dollar sales figures of garments cut from Bondyne cloths. Having already expanded its marketing scope from an estimated retail sales volume of \$1.5 million in 1957 to over \$7 million in 1958, the Bondyne program is expected to hit \$25 million in 1959.

For the future, continued expansion of the Bondyne sales effort is expected to include fabrics employing filament yarns in the warp and Dynel blend fillings. Filament nylon and filament rayon, in blends with Dynel, are expected to make an important contribution too in the extension of the Bondyne group of fabrics. Also, Dynel's resistance to acids and chemicals will be helpful in the expected increased use of Bondyne fabrics in uniforms and work clothing. For further information write the editors.



Lindly & Co. demonstrated its automatic yarn inspection equipment.

Report on Milan

(Continued from Page 34)

which has 60 feeders, a diameter of up to 40 inches, and horizontally operating needles and vertically operating sinkers. The TORRINGTON Co., showed a wide range of knitting and sewing needles and roller bearings.

In the area of inspecting devices aiming at improved quality of yarns and fabrics, the display of equipment manufactured by LINDLY AND CO. of the U. S. aroused considerable interest. Shown at the

booth of Orsi s.p.a. of Milan, the Lindly equipment included an automatic yarn inspector and the Lindly Electrotense, a device for controlling yarn tension from almost zero to about 20 grams. Used on warping creels for warp knitters, the Electrotense is said to result in more uniform beams, and hence fewer broken ends and better cloth.

A strong trend towards closer, more automatic control was shown by exhibits in the dyeing and finishing sections. BENNINGER ENGINEERING CO. LTD., Switzerland, had an automatic high-temperature dye jig for processing synthetic fibers in medium and dark shades. A sampling device enables a cutting to be taken from any place on the length and width of the fabric and removed from the kier without the temperature or pressure being lowered.

A completely original method of propelling the hank rods through the drying chamber was demonstrated by FLEISSNER AND SOHN, Germany. In one hank drying unit, the rods are propelled by cams on to one of two sets of guide rails, alternative rods going on to different rails. The revolving rods touch the preceding rods, thus propelling each other through the chamber. There is a complete absence of driving chains in the unit.

On the stand of ARTOS MASCHINENBAU, German affiliate of PROCTOR AND SCHWARTZ INC., a range of finishing equipment for impregnating, drying, tentering and curing was shown, including a continuous process unit for the conditioning, polymerisation, and even dyeing, of woven fabrics.

An automatic multi-colour silkscreen unit exhibited by FRITZ BUSER S.A., Switzerland, emphasized the astonishing rate of development of this type of printing. Called the Hydromag 11, it can print fabrics of 44, 54, 66 and 90 inches width in lengths of 15 and 24 yards. Production rates of from 350 to 1,200 yards per hour can be obtained, with repeats of 20 to 118 inches.

The COBBLE-SUPERTUFTER GROUP showed the Model 126-DT tufter with a 60 roll single end control scroll pattern attachment.

An official of the CURLATOR CORP. which was showing its Rando-Feeder and Rando-Webber for the first time outside the U. S. A., said: "We have never encountered anything like the interest shown at this exhibition. It's astounding." He said the company had received an average of 60 inquiries daily.

Improved Needle Loom

Snedeker & Co., Inc. is offering a new needle loom for the production of tapes and strips up to 1 inch wide. Made by Texnovo s.p.a., Italy, the loom is the multihead type and is virtually 100% automatic. It has 16 patented needle weaving units instead of bobbins, and will operate at 800 p.p.m. A special cam box is placed under the shaft with interchangeable cams in the ratio of 1:8. Upon request the ratio can be 1:6. The shaft frames work in a pack and are guided from the side and controlled from below.

A special take-up motion gear-regulator allows adjustment from a minimum of 6 picks per inch to a maximum of 100 picks per inch.

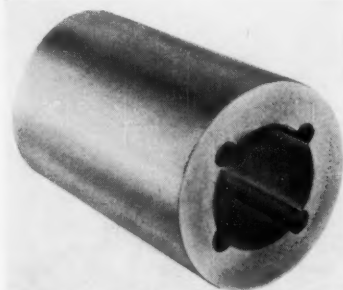
There are patented rotary filling wheels with built-in electric filling stop motion. There is also an electric warp stop motion.

Snedeker also offers the Texnovo shuttleless tape and ribbon loom which will produce fabric up to 9½" in width. This machine has a bobbin weaving unit with continuous filling supply. It makes identical selvages on both sides of the web. For further information write the editors.

Better Bushing

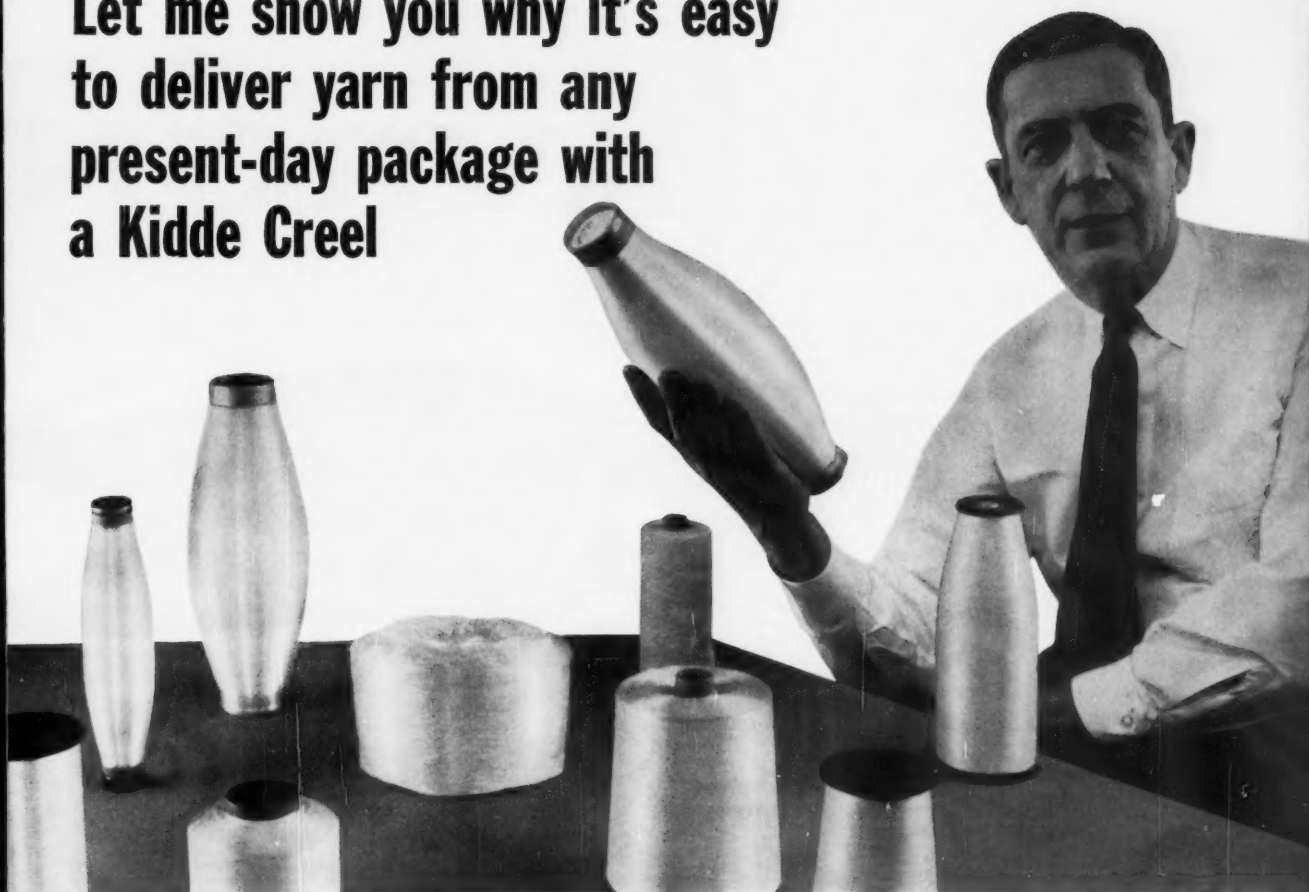
American Smelting & Refining Co. has designed a continuous cast bronze bushing for spinning machines which, it says, eliminates lint clogging. This is accomplished

by using a standard cylindrical shape and spacing four vertical flutings around the inside. The flutes permit the lint to fall through instead of accumulating between the bushing and the rod. For further information write the editors.



Improved Spinning Machine Bushing.

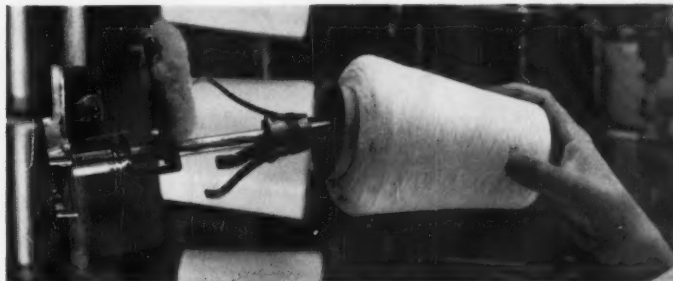
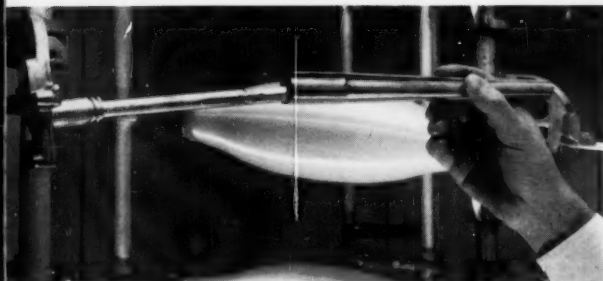
Let me show you why it's easy to deliver yarn from any present-day package with a Kidde Creel



You need only a basic holder and adapters to handle any yarn packages on the Kidde creel. You can see in the picture at bottom left, for example, how easily the basic pirn pin can be equipped with adapters to handle any pirn of textile yarn made today. The snap-on holder shown next to it accommodates any taper cone, as well as a range of straight packages. What's more, we'll design holders and adapters for future packages

to accommodate them on the present Kidde creel.

Of course, this is only one Kidde feature. We could describe our tension devices and the uniquely simple Kidde stop-motion. We could explain how Kidde makes a creel to your specifications and how easily you can adjust its clamp-type construction to fit your changing needs. But we have a booklet that does all this. We'll be glad to send you one. Just write or phone.



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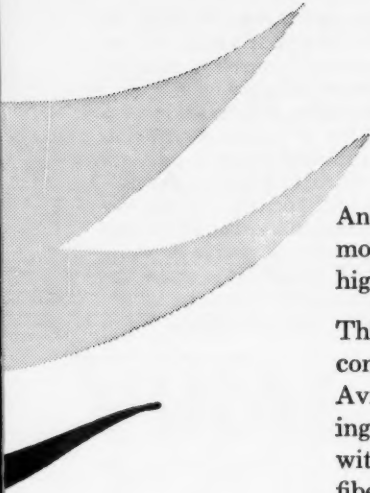
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Frank Leslie

(Continued from Page 30)

so able a textile salesman for more than 30 years and since he is specially gifted in the skills of self-expression it is perhaps appropriate to finish this piece with some of his own words on what his career in selling means to him.

Of special interest to young men starting out in fabric selling are these notes which he made for this article:

"To be a gray goods salesman you have to be around long enough to be accepted by your customers. In the absence of the kind of product that you can really do a 'selling' job with, this can be a frustrating experience. Our biggest problem with young salesmen is to keep them from becoming discouraged in the first year or so. I recall that I had a customer in my first year to whom I had sold several good orders.

"One day he told me he had given his last order to a competitor because on the previous orders he had given me the market had gone against him. When I reminded him that I had not influenced or advised him to buy at the price level he had chosen himself, his answer was that I was unlucky for him. This is the kind of thing you have to learn to live with.

"Selling a staple commodity like gray goods, is a specialized kind of selling. To begin with your customers know—or think they do—more about the quality of your merchandise than you do. You have no 'line' to offer and very little

you can 'romance.' You are thrown entirely on your own individuality and your ability to get along with people. Service, courtesy, fairness and appreciation are the stock in trade.

"For your mills, however, you must have a sense of markets—which is far more difficult. You must know when to shift loans in advance of changing styles or when to ride out the doldrums of a temporary lull. For this you become an avid reader of statistics, market analyses and the predictions of the coming mode. A well-polished crystal ball and an ability to make deductions from the thickness of tree moss or the activity of the groundhog are also helpful."

And, finally, on what his career in textiles means to him:

"The most rewarding aspect of my business career has been my association with the two most remarkable men in the textile industry in the last 50 years—E. P. Cave, of the old Ely, Walker firm, who was the greatest merchant in textile history, and Spencer Love, who is the Renaissance Man come to textiles.

"In 1935 Ed Cave wrote my father that I was 'a damn good salesman.' This was not a gratuitous compliment but a reflex of pain occasioned by the delivery on a seven cent market, of some sheetings I had sold him 60 days before at eight cents. This was the proudest moment of my life, never equaled until 1958 when Spencer Love asked me to represent the product of his cotton gray cloth mills—which was like being asked to mix paints for Leonardo da Vinci."

Fiber Glass Expansion

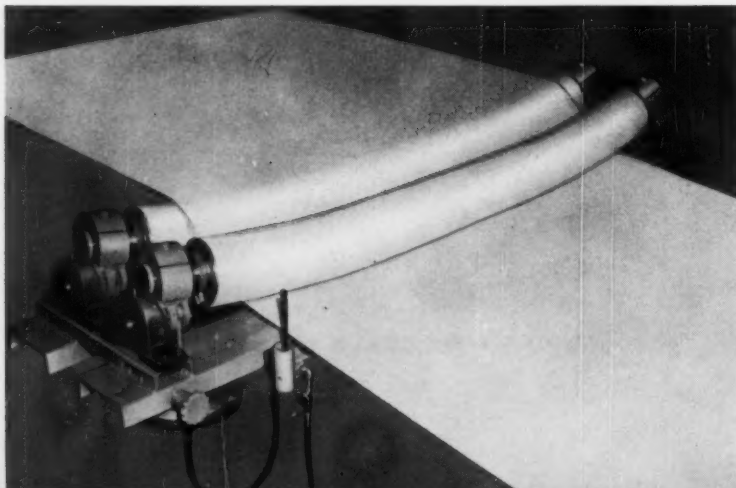
Johns-Manville has allocated funds for expansion of production facilities at Waterville, Ohio, and Parkersburg, W. Va., to increase capacity for manufacturing fiber glass yarns and roving. The expansion program should be completed by early 1960. In addition, studies are being pushed on the need for a new southern textile fiber glass facility and a possible boost in Canadian fiber glass output to meet rising demand there for fiber glass insulations.

Johns-Manville has been expanding its fiber glass manufacturing capacity almost continuously since December 31, 1958, when it acquired the former L.O. F. Glass Fiber Co. of Toledo with six plants and a technical center. Johns-Manville, with completion of the current expansion program, will have increased total fiber glass productive capacity by 50% since the date of acquisition.

Cotton and Rayon Prices

The price of cotton on the domestic market is lower in relation to the price of rayon staple than it has been for any sustained period in the past nine or ten years, according to the National Cotton Council. Dr. M. K. Horne, its chief economist, reported that since January of this year the price of standard rayon staple has been raised two cents a pound while the cotton price has declined.

Domestic consumption of cotton in the new crop year, Dr. Horne said, will be "better than last year's 8.7 million bales." Cotton's major market losses, in the 1948-58 period, he said, have been in tires, bags and textile exports. On the other hand, Dr. Horne pointed out, cotton's gain in the domestic market for clothing has been almost as spectacular as its losses in these three market areas. Cotton, he added, achieved a net increase of 1,185,000 bales in 10 years.



Automatic Web Control

The Web Master, a new triple-action automatic web control unit, is being marketed by Mount Hope Machinery Co. The unit is said to simultaneously prevent misalignment of fabric edges, eliminate wrinkles and prevent loss-of-width. Models are available to meet all production requirements and web tensions up to 10,000 pounds across the roll. For further information write the editors.

PAPERS OF THE AMERICAN ASSOCIATION FOR TEXTILE TECHNOLOGY INC.[®]



A A T T

VINAL

Part 1 what it is what it can do

By Richard D. Wells
FABRIC RESEARCH LABORATORIES

POLYVINYL ALCOHOL as a fiber-forming polymer has been the subject of much experimentation both here and abroad over many years. Early work in this field in Germany goes back as far as the 1920's. The excessive solubility of these early fibers so seriously limited their practical application that interest in them dwindled while more active attention was given to fiber developments with less water-sensitive polymers.

Vinal as a fully commercial fiber type—and production of over 30 million pounds a year certainly qualifies it as such—is predominantly a Japanese development. The practical techniques which developed polyvinyl alcohol fiber from a limited use curiosity to the status as an important and versatile textile material evolved largely in the laboratories and pilot plants there.

American commercialization of vinal would appear a reversal of the generally assumed West-to-East flow of industrial technology. It would be far from exceptional, however, for the counter-flow of new developments is already well established even in such rapidly advancing fields as electronics. As these newer sources of progressive technology grow in number and effect there is a natural increase in world traffic in patents and know-how. There is also a trend towards international commodity competition on the basis of relative individual merits of non-identical items, in contrast to that between standardized items differing only in price.

These two trends present both opportunities and problems, and they force many decisions as to whether to join, fight, or stand aside as new foreign developments appear. These observations are by the way of background for discussing vinal at this time. It is certain that vinal, from one source or another, is a fiber type to be reckoned with. In fact its presence is already being felt in certain quarters of American industry today.

Polyvinyl alcohol fibers have been commonly and

internationally referred to as "vinyon". Until recently this term has been used by Airco as the recognized designation. Airco has since decided to adopt "vinal" for general reference, to minimize confusion resulting from the new Federal Trade Commission ruling requiring fiber identification in certain consumer products, and establishing the coined word "vinal" as the official generic term. Under this FTC definition, "vinal" covers fibers containing at least 50% by weight of vinyl alcohol ($-\text{CH}_2-\text{CHOH}-$) units and at least 85% in total of alcohol and acetal units. The older term "vinyon" may well continue to appear in other references, and unless more definitely specified, "vinal" and "vinyon" may be assumed synonymous for general chemical classification.

Vinal is a rather large category, encompassing a variety of fiber sub-types and modifications thereof, derived from several spinning and hardening processes. Only a few of these, of most immediate interest, will be described and discussed herein. These

Richard D. Wells is an assistant director of the Fabric Research Laboratories in Dedham, Mass. Currently he is on leave of absence from this post to serve as a consultant for Air Reduction Chemical Co. in its vinal fiber program. A graduate of Harvard Engineering School, Wells has been engaged in various phases of textile activity since 1933. Before joining Fabric Research Laboratories, he was director of research for Bates Mfg. Co.



Richard D. Wells

Presented at the Sept. 9th, 1959 meeting of the American Association for Textile Technology at New York, N.Y.

are commercial products of the Kurashiki Rayon Co., serving as prototypes in a vinal fiber program currently under study by the Air Reduction Chemical Co. Airco's polyvinyl alcohol resin plant is now building and is scheduled to go "on stream" this fall. Concurrent with the designing and engineering of fiber plant facilities Airco is marketing certain of these vinal fibers to carry on necessary product and market evaluations and to supply immediate requirements as they develop.

Since the more soluble vinal types have already been mentioned in historical reference it would be well to give them their due. Vinal fibers of several degrees of solubility ranging from 80° to 98°C. are, in fact, now undergoing evaluation as binder fibers. For this purpose advantage is taken of a region of wet plasticity below the actual solubility temperature, rather than solution itself, to effect necessary tack and flow for adhesion. Since the degree and character of this plasticization is controllable within limits by moisture, time and temperature variables, there can be considerable latitude in effects obtainable.

Tension and Solubility

Some of the few specialized uses originally proposed for the earliest "soluble" vinal fibers have not yet been made fully practical. This is due, in part, to the rather marked effect of tension on the effective solubility of these fibers. Perhaps the reader may have seen the lecture demonstration of the polyvinyl alcohol fiber, with a weight suspended from it, maintaining its integrity in a beaker of boiling water while its mate with no load dissolves very rapidly. This feature has presented certain tension control problems with relation to the proposed use of soluble vinals as temporary reinforcement, spacer, and separator elements in textile products. It may also offer, however, some new opportunities along other lines.

The main subjects of discussion of course, are, the insolubilized vinals of more general application. It was largely through the development and practical adaptations of the several hardening and insolubilizing processes that vinal became a mature commercial product. The actions and interactions of the modifying systems involve some rather complex concepts as well as details of technology, and will not be discussed here. Briefly, vinals can be brought to solubility temperatures close to 100°C. solely by physical conditioning, and to over 110°C. by chemical means such as acetalization. These solubility temperatures are not sharp threshold values, and what may be considered practical wet softening temperatures are a few degrees lower.

Safe Side of Solubility

At first though these solubility temperatures may seem rather precarious, and the vinals rather vulnerable. Second thoughts, as well as practical experience with vinals, show that actually in only a few instances are fiber solubility temperatures above those of the vinals of any particular consequence. In processing, pressure kiereing and pressure dyeing, of course, would not be feasible, but are not in fact necessary. Steam sterilization as for hospital gowns would not be recommended, but there is now a trend away from steam methods anyway. It is seen that in virtually all conditions of processing and use the vinals are on the safe side of the solubility line, and being so, the extent of the margin makes little difference.

The dry melting temperatures of the vinals are in quite a different range, exceeding 425°F. It may be noted in this connection that the vinals at elevated temperatures do not behave in what has been considered a truly thermo-plastic character, and retain a rather constant stiffness throughout the entire load-elongation range. This is illustrated graphically in Figures 2 and 4.

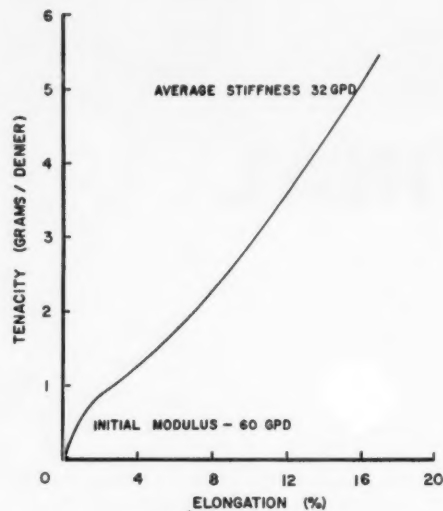
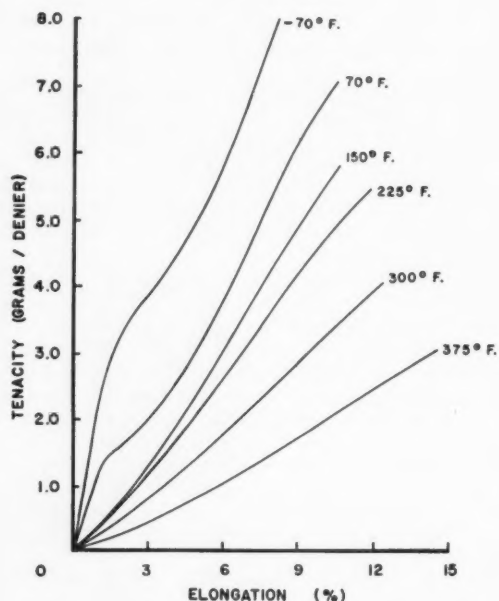


Figure 1



VINAL-1200 DENIER MULTIFILAMENT
TESTED AT VARIOUS TEMPERATURES
Figure 2

Selected for specific discussion are two vinal subtypes now in various stages of end-product development and evaluation in this country.

The first of these is a wet-spun acetalated type currently coded as 5F. Somewhat characteristic of

wet-spun fibers in general this has a collapsed rod cross section roughly kidney bean in shape, rather distinct skin and core phases, and fiber tenacity considerably influenced by denier. In Table I are tabulated some of the physical data for the most commonly used 1.4 and 3.0 denier staple and the 1 denier tow.

TABLE I
STAPLE FIBER PROPERTIES

| | 1.4D. Staple | | 3.0D. Staple | | 1.1 D. Tow | |
|----------------------------|--------------|-----|--------------|-----|------------|-------|
| | RHT | MCM | RHT | MCM | | |
| Standard tenacity-GPD | 5.4 | 6.0 | 4.4 | 4.8 | 6.0 | — 6.5 |
| Wet Tenacity | 4.4 | 5.3 | 3.4 | 3.9 | 5.0 | — 5.3 |
| Standard Elongation—% | 18 | 15 | 22 | 21 | 15 | — 13 |
| Wet Elongation | 20 | 16 | 23 | 22 | 15 | — 13 |
| Tenacity at 5% Strain | 1.2 | 1.7 | 0.9 | 1.1 | 2.0 | |
| Elastic Recovery (5% Str.) | 52 | 60 | 45 | 50 | 64 | |
| Average Stiffness—GPD | 30 | | 20 | | 40 | |
| Modulus | 65 | | 40 | | 90 | |
| Specific Gravity | | | 1.28 | | | |
| Regain at 65% RH | | | 4.5—5.0% | | | |
| Regain at 100% RH | | | 12% | | | |
| Water Capacity | | | 30% | | | |
| Melting Temperature | | | 420°—450°F | | | |

Tenacities range from 4.5 to 6.0 with retentions in the wet state, at standard temperature, of 80 to 85%. These values certainly place vinal 5F in the high-strength classification of fibers. Elongations are in the medium 15 to 25% range, and about the same wet and dry. These data are for the present grade of vinal 5F designated as RHT, also for the new MCM grade soon to be standardized, which have about 10% greater tenacity and slightly less elongation.

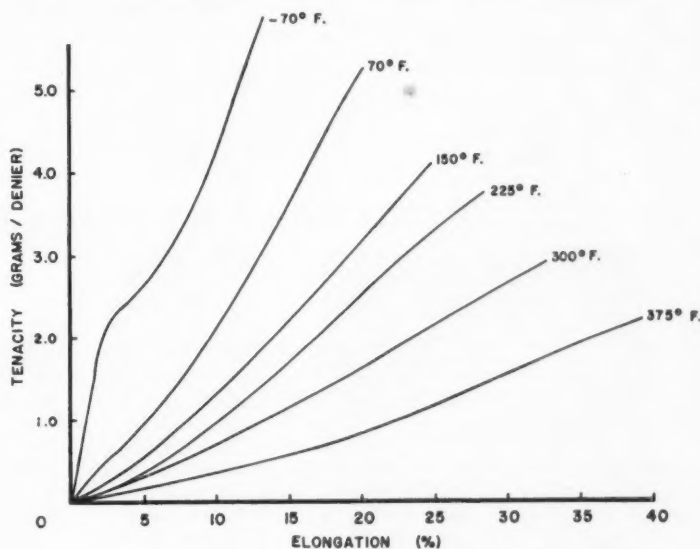
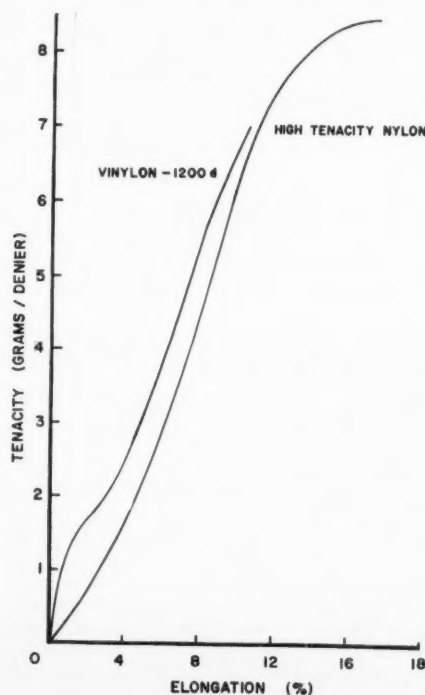
As will be recognized from the relatively low elasticity indicated in Table I by percentage recovery

from 5% strain, un-modified 5F vinal is not a contender in the crease-resistance apparel fabric field except in a supporting role. It should not be concluded, however, that low elasticity is inherent in vinals in general. Types more resilient than 5F are in fact in rather large volume use in apparel today, though in our estimation not yet fully acceptable for

the American market. Also, 5F vinal is responsive in some degree to treatments similar to those used to enhance crease resistance of the cellulosic fibers; the commercial practicability of such procedures has not yet been fully determined.

The 5% strain tenacities, stiffness, and modulus data are to be noted, but the general stress-strain characteristics of 5F vinal might best be illustrated with the diagram in Figure 2.

Specific gravity of 1.27 is in the medium range among organic fibers. The moisture regain and capa-



VINAL-500 DENIER MONOFILAMENT TESTED AT VARIOUS TEMPERATURES

Figure 4

Figure 3

city of 5F vinal are of a rather high order for a synthetic fiber, being approximately two-thirds those of cotton, and approximating those of acetate.

Figure 1 shows the load-elongation curve for the 1.4 denier vinal 5F staple, taken as typical though the other deniers will vary slightly from it. In this is to be noted the characteristic steep rise in the lower region, the slight yield point, and continued rise through the higher extensions in a slope that projects back to very close to the zero point of the axis. Among fibers of both high tenacity and at least medium extensibility this pattern of the stress-strain relationship is unusual. It is also highly significant. Since the case for vinal in many applications rests on these stress-strain characteristics, it would be well to generalize a bit and discuss two aspects of fiber and fabric mechanics that are particularly pertinent to vinals specific stress-strain properties.

Consider first the simpler case where the critical performance requirements for a textile product are

bility at normal loads. A material such as vinal, with both the high modulus for stability and the strength and extensibility to withstand extreme accidental loadings, is certainly of interest in such cases.

Somewhat the same principles apply in the more complex but also more common situations where the "real" critical requirement is resistance to non-linear or non-planar stresses on the textile structure, such as forces causing puncture or tear. The performance of fibers under these conditions depends not only on their internal ability to withstand the loads actually imposed on them individually, but in many instances even more on their collective ability to distribute a localized stress over a wide supporting area before individual fibers start rupturing or unacceptable distortion of the structure occurs.

Vinal's characteristic stress-strain curve translates unusually favorably in these terms. As an example of this principle of fabric mechanics relating to fiber properties, we mention an industrial fabric construc-

TABLE II
TENSILE AND WORK RECOVERY OF IMPORTANT INDUSTRIAL FIBERS

| | TENSILE RECOVERED FROM | | | -Elongation- | WORK RECOVERY FROM | | |
|--------|---------------------------|----|-----|--------------|-----------------------|----|-----|
| | 3% | 5% | 10% | | 3% | 5% | 10% |
| Nylon | 90 | 89 | 86 | | 57 | 55 | 52 |
| Dacron | 79 | 65 | 51 | | 49 | 35 | 24 |
| Vinal | 87 | 75 | 63 | | 42 | 36 | 35 |
| Rayon | 40 | 31 | 25 | | 14 | 14 | 10 |

| Tenacity at | Nylon | Dacron | Vinal | Rayon |
|----------------|-------|--------|-------|----------|
| 3% Elongation | 0.62 | 1.40 | 2.1 | 0.94 |
| 5% Elongation | 0.89 | 1.54 | 3.0 | 1.16 |
| 10% Elongation | 1.84 | 2.24 | 6.8 | 1.85 GPD |

VINAL-CONTINUOUS FILAMENT

| | 1200 d. Yarn | 6 d. Filament | 500 d. Monofilament |
|-------------------|--------------|---------------|---------------------|
| Dry Tenacity | 7.2 GPD | 9 GPD | 5.2 GPD |
| Wet Tenacity | 5.8 GPD | | 4.5 GPD |
| Dry Elongation | 10% | 10% | 24% |
| Wet Elongation | 13% | | 25% |
| Average Stiffness | 72 GPD | | 22 GPD |
| Modulus | 160 GPD | | 50 GPD |
| Toughness | .34 GM-CM | | .47 GM-CM |
| | CM-DEN | | CM-DEN |

in fact lineal, as for instance in cordage, webbing, and belt and hose components. It has been customary to consider materials and constructions for such uses in terms of ultimate breaking strengths, and specifications are generally so written. Frequently, however, the specified ultimate rupture levels are so far in excess of true need, even applying the nominal safety factors, and the "overbuilding" of such standardized items has really been necessary only to obtain an acceptable dimensional stability at normal working loads. This comes to attention in many instances in industrial applications where it is found that in replacing high modulus cotton or linen with a lower modulus synthetic, a greater amount of the synthetic than would be needed to meet necessary ultimate strength levels is required to achieve necessary sta-

tion in which vinal, replacing the traditional material, added 25% to the strip tensile strength, 40% to the grab strength, and over 200% to the tear strength. Such proportional results cannot be expected in all cases, of course, since twists, densities, crimp, and construction balance, all affect fiber-to-fabric property relationships. This example will serve to illustrate the general point, however.

One other physical property that bears greatly on the serviceability of most textile products is fiber abrasion resistance. Vinal 5F is no exception to the general rule that relative rating of abrasion resistance of a fiber is highly influenced by choice of samples, type and severity of test, and what is taken as an end-point. However, putting together a general summation of several series of evaluations including

its performance in blends, the abrasions resistance of vinal 5F is seen as approximately twice that of cotton. Excepting the case of the nylons, this puts vinal 5F well up in the comparative scale.

Some of the other characteristics of vinal 5F such as mildew and chemical resistance will be discussed more appropriately in the second paper in relation to end uses. Present accelerated test data on actinic degradation is rather scattered and in comparison with samples not directly corresponding to those of reference here. As will be mentioned later the experienced endurance of vinal 5F items under continuous weathering conditions in service is vinal's present voucher. More definitive data on this will be forthcoming, also on heat degradation characteristics.

Without further detail on properties of vinal 5F, since these are the main basis for the discussion of processing and end-uses which will follow, we proceed now to the filament vinals. The data to be presented relate to a sub-type designated as "FO", in multifilament and monofilament yarn form.

Tire Cord Applications

The FO multifilament is a development which at this time is rather exclusively directed towards tire cord usage, and is already in commercial application for this purpose. It is a high-tenacity form, with 9 grams per denier in filament strength at 10% elongation, and over 7 grams per denier in strength of yarn. Figure 2 shows the load-elongation curves for this 1200 denier 200 filament FO yarn. Here again we note the characteristics of vinal in the steep initial rise, the moderate yield point, and the continued rise in almost true Hookean behavior. The curves at elevated temperature show the expected lowering or stiffness, but little indication of plastic flow.

We can see in Figure 3 a comparison of the vinal FO and a tire type nylon, both as yarn, to show particularly the marked difference in their characteristics in the general region up to 2 grams per denier to loading. To the extent that stiffness in this range is significant in the critical stability of an end-product, vinal FO has rather a strong case.

To place vinal FO more definitely in the range of industrial yarns in this aspect of low elongation at moderate loads, we may note Table II giving tenacity

values of vinal FO, in rank with published data for three other fiber types, at various strain levels. One can see from values such as these some of the basis for an early remark that there is nothing quite like vinal from which close analogies can be drawn.

In Table II we should look also at the tensile and work recovery data in these same comparisons. As indicated by the conventional percentage recovery from standard strain levels, vinal appears roughly midway between nylon and Dacron though the patterns are dissimilar. It should be emphasized that in these comparisons recovery is from quite different load levels. Quite a different picture develops if these figures are turned around and comparison is made on the basis of equivalent loads. Taking 2 grams per denier as a standard load, we see that the nylon has been stretched about 12%, the Dacron about 8%, and vinal FO less than 3%. A rough calculation with interpolated tensile recovery values applied to these elongations shows a stretch of the nylon of over 2%, of Dacron over 3.5%, and of vinal FO something less than 0.5%.

While it is not indicated that in all types of critical usage such comparisons are made more validly on the basis of equivalent stress rather than on equivalent strain, both should certainly be considered in trying to evaluate a new material. Since in most all practical instances both the characteristics of the material as well as the external force govern the stresses and resulting strain actually imposed on the fiber components, it would take a highly involved calculation to compute what these actually are even in a rather simple fiber product at rest, and it would be impossible to follow these through cyclic or other changes. This practical test is still the best basis for comparison, and FO vinal is at that critical stage of progress at this time.

To show how versatile vinal can be, Figure 4 illustrates FO vinal in monofilament form. While it is noted that this differs quite markedly in the low stress-strain region, there is still the characteristic general pattern of vinal in the over-all slope, with no critical draw or yield points.

Once again it can be noted that while there are many variations possible within the vinal fiber family, all of them are distinct in character from any of those now on the domestic scene to which they might reasonably be compared.

Part 2 — Processing and end uses

By Walter H. Hindle

AIR REDUCTION CHEMICAL CO.

POLYVINYL ALCOHOL is an extremely reactive material, particularly with a wide range of aldehydes, and a family of fibers with widely varying characteristics has been made commercially. In this paper, however, we are going to discuss vinal staple and tow which has been treated with formaldehyde in a post-spinning operation. PVA fibers as originally developed were water soluble but their reaction with formaldehyde coupled with certain processing steps renders them insoluble in boiling water. However, before these operations, the fiber is hot water soluble and the material in this form is finding considerable interest in the non-woven and paper fields in conjunction with the regular water insoluble fiber. In the paper field, the compatibility of polyvinyl alcohol fibers with the various pulps appears to offer economic value in imparting strength.

Walter H. Hindle is a textile market development consultant with an office in New York City. He is currently affiliated with Air Reduction Chemical Co. A graduate of the Manchester College of Science & Technology, he has been associated in the United States with Celanese, Burlington Industries and Chemstrand Corp. He is the holder of a considerable number of patents and well-known for his publications and lectures on technical subjects. He was recently made a fellow of the English Textile Institute for his contributions to textile technology.



Walter H. Hindle

In any discussion of fiber properties and end uses, the price of the fiber is of paramount importance. The price of vinal is \$.85 per lb.

One of the most important properties of vinal is fiber tenacity, ranging from 4.5 to 5.5 grams per denier, in 1, 1.4 and 3 denier. The Japanese, being a practical people, were quick to seize upon this property in relation to several others in the end use of ropes and fish nets, and over the course of years have built up a business of some 9 million pounds in this use alone. The other properties of vinal which were so important in the development of this industry were retention of initial strength through resistance to weathering and micro-bacteriological decay; ease of handling through lightness in weight compared with the Manila products and rapid drying which again reduced the need for handling.

The same properties together with a high tear strength and good abrasion resistance have also made vinal important in fabrics required to withstand rugged outdoor conditions such as tarpaulins, hatch covers and tentage. Industrially, conveyor belts, hose ducks and vinyl and rubber coated fabrics are all established as active end uses for vinal. The resistance of vinal to the degradative effects of coating decomposition compounds with the efficiency of bonding between such materials and the fiber are the basis for this trade.

Sewing Thread

Obviously fabrics designed for outdoor use are of no more value than the material with which they are sewn and vinal has found good acceptance as a sewing thread in the industrial and related fields. A considerable amount of vinal has been used in bicycle tire cords and to one who has travelled on Japanese roads the need for ruggedness in tire construction is obvious.

The fiber employed in such end uses is primarily 1 denier per filament in tow form which is stretch broken by the Perlok system to produce an additional 20% of yarn tenacity which is so important in the industrial uses mentioned.

The chemical resistance of vinal particularly to alkali and a large number of solvents is of a high order. The resistance to acids is high at low temperatures and even at temperatures as high as 80°C. in concentrations of 15% of sulfuric acid for 60 hours there is no noticeable affect upon yarn tenacities. Conditions more severe than these, however, promote a progressive degradation of the fiber. The good chemical resistance of vinal has made it important in chemical workclothes in 100% form and in blends with cotton where the chemical resistance is less of a requirement and vinal's ruggedness of performance in terms of tear and abrasion resistance is important.

The relatively low elongation of vinal—15 to 17%—has been important in the development of the range of vinal-cotton blend fabrics. The efficiency of reduction of fiber tenacity to yarn tenacity of vinal-cotton blend work is of a high order and equal to those of some fibers with a considerably higher initial fiber tenacity than that of vinal. Vinal-cotton blend fabrics have been made in sheetings, shirtings and dress goods in addition to the drills and twills used in workclothes. The inertness of vinal to chemical degradation is important in cotton blend resin finished fabrics from an abrasion resistance standpoint.

In the knitting field the use of vinal has been established overseas in underwear where the combinations of softness of hand, ease of cleaning, rapid drying and body comfort in relation to rugged wearability have

provided the necessary consumer appeal with good economic value. The fact that vinal has a moisture regain of 5% under normal conditions of temperature and humidity which rises to 10% under conditions of high humidity, is an important factor in body comfort and the success of vinal in this field.

Wet Processing

The wet processing of 100% vinylon fabrics follows conventional lines with one minor exception. Fabrics are singed with a broad, low temperature flame and desized conventionally to the warp size used. Vinal has an excellent initial whiteness, and scouring need only be carried out for fabric cleansing purposes. In such cases a suitable non-ionic scouring material may be used at any temperature found to be satisfactory for the removal of the specific soil. Bleaching is carried out either with the hypochlorites or sodium chlorite in conventional fashion. Bleaching takes place readily and excellent whites are obtained especially when supplemented by the optical bleaches used for cotton. Care must be taken to antichlor completely to remove the danger of subsequent high temperature yellowing.

The dry softening temperature of vinal is high—between 420-435°F. But the wet softening temperature is just above the boiling point of water—namely 218°F. Under practical mill applications this condition is not reached except by design; but the results of a threshold approach to these conditions are manifested by a stiffening of hand. Unless drying is carried out under the most extreme conditions this stiffness is not of a permanent nature and can be broken down by mechanical action. The stiffness can be avoided completely by staggering drying cylinder temperatures or by wrapping the initial cans. It is apparent that rate of moisture removal is important but once substantially removed, high temperatures may be used without adverse effect.

When blended with cotton, vinal follows the conventional cotton process using hypochlorite except for pressure boiling. Mercerizing of such blends is carried out conventionally. In bleaching, the vinal component whitens at an appreciably faster rate than the cotton. Attention to drying temperatures is not as important in the presence of cotton. Complete antichloring is extremely important.

Dyeing

The word "dyeability" is very flexible and means many things to many people. Among such understandings are dyeing rate, saturation levels, ease of application, costs and color fastness.

Vinal has a workmanlike dyeability in that standard dyeing methods are used to give excellent fastness properties in the end uses so far conceived and reduced to practice at costs commensurate with the cost of the fiber. Unfortunately from the standpoint of total flexibility, vinal picks up so many classes of dyestuff that the ranges of color and white and two color effects are limited.

Vinal may be dyed with selected direct, basic, sulphur, vat, naphthol and premetallized dyestuffs by methods closely similar to those currently used for cotton, wool and the synthetic fibers. Basic and disperse dyestuffs come under the category "easy on easy off", and are not used where good wash fastness is a requisite, although the disperse dyestuffs on vinal are equivalent to those on cellulose acetate with a higher degree of light fastness.

A range of direct dyestuffs can be applied to vinal by conventional methods to produce direct color fast-

ness at costs similar to cotton. These dyestuffs are primarily those of low molecular weight and simple constitution. The more complex direct dyestuffs capable of fixation by resin-metal complexes have lower saturation levels although the dyeing rate is such that a range of union shades can be obtained in blends with cotton and rayon.

Selected sulphur dyestuffs provide an excellent range of shades within the limits of their potential. The dyeing methods are strictly conventional except that oxidation requires a somewhat longer period than normal for cotton. A wide range of union shades is available in blends with cotton. The color fastness of sulphurs on vinal is similar to cotton as far as wash fastness is concerned with noticeable light fastness improvements over cotton.

Antraquinone vats provide an excellent range of light to medium shades by conventional dyeing methods. Dark shades are obtained by the indigoids.

An outstanding feature of vinal dyeing is the high light fastness that can be obtained which in many cases is greatly superior to that which can be obtained on any other fiber. As an example: indigo blues in medium depth on cotton show a sharp break at 20 SFH, whereas the same dyestuff on vinal yields 160 SFH.

Naphthols can be applied to vinal now by what are standard techniques for synthetics. Blacks, navies and maroons are readily obtained, but some other combinations are somewhat more difficult because of the problem of determining the mole relationship of naphthol and base in relation to the variability of substantivity brought about by minor pH changes. As is the case with cotton, crocking presents serious problems in this classification.

The neutral dyeing premetallized class normally applied to wool and nylon is used extensively in the dyeing of vinal. Shades from pastel to black can be obtained with light fastness ratings of 6-8. These dyestuffs are best applied from neutral or weakly acidic baths. The dyeing rate is rapid and retarders are recommended.

Examined but of no particular value thus far are the reactive dyestuffs. Carriers and very high temperatures have no value in vinal dyeing—the maximum temperatures required being 185°F. Lacking, at the moment, is the ability to obtain heavy bright shades such as produced by the cationic dyestuffs but thus far no programs have been restricted by dyeability problems.

Finishing

Vinal polyvinyl alcohol fiber can be softened readily by the use of a wide range of cationic materials usually requiring one-half to one-third the quantities required for the hydrophobic fibers. In blends with cotton and rayon, conventional resin finishing methods are used except that in order to obtain maximum pick-up by the vinal component an increase in immersion time is recommended.

Vinal will advantageously retain about 25% of the resin weight as will cotton or rayon. However, 50/50 blends of vinal and cotton show crease recovery angles closely similar to 100% resinated cotton. Direct color fixatives based on dicyandiamide can be included in the finish bath. Water repelling and proofing treatments are carried out by conventional methods except for the need for longer immersion times and lower drying temperatures. After drying, curing follows standard lines.

Projected End Uses

As pointed out earlier in this paper, although there are a number of proven and established end uses for vinal, the entry of this fiber into the American economy is expected to develop end uses previously not contemplated for purely domestic reasons, and it is my plan to project several American end uses based on fiber properties.

Knitting

It is expected that vinal will be used in the knitting field in underwear and outerwear, throw rugs and pile fabrics for liners, and coats. In underwear, the fiber characteristics deemed to be good are moisture absorbency to give body comfort, softness of touch, ease of cleaning, retention of color and, of course, durability of wearing. Pilling has been observed to be of a low order. In outerwear the same characteristics are important, plus the ability to modify hand through the use of resins and softeners.

Knit pile fabrics of vinal in throw rugs made from a blend of 3, 6, and 10 denier can be produced by conventional methods. Brightness and fastness of color, appearance, ease of washing and low rate of burning are reasons for the use of vinal in this field. A denier blend of 1.4 and 3 can be used to make deep pile coat fabrics. In this case the aesthetics of hand and appearance render such a use desirable together with the low static properties which can be considered to reduce rate of soiling from electrostatically charged particles. Liner fabrics made from blends of 3 and 6 denier can be contemplated.

Upholstery Fabrics

Vinal has a number of physical properties that are particularly important in the upholstery field and include high tear strength and good abrasion resistance, good soiling resistance, easy cleanability and very high light fastness.

Vinal-Cotton Blends

It is believed that because of its inertness to chemical degradation, good abrasion and tear strength and compatibility with cotton processing, vinal has much to contribute in blends with cotton for wash and wear purposes. The action of many types of resins used in wash and wear finishing of cotton is well known and it is expected that vinal will be able to contribute major benefits in this area in terms of longer wearability.

Nonwovens

A brief study of the physical properties of the vinal family of fibers readily indicates their potential in the nonwoven field. Possessed of high tenacity, they have the property of becoming thermoplastic under conditions of high temperature when wet. Possibilities of self-bonding come into consideration with consequent possibility of reducing the quantities of conventionally used bonding materials. Also to be taken into consideration is the possibility of using blends of insoluble and hot water soluble fibers, the latter in a surface solubilized form to produce a bond with the water insoluble type to give a homogeneous sheet of high tear resistance and attractive economics.

Paper

Although a paper type material has been made from 100% vinal fibers, its first use in this field can be contemplated to be that of an economic fortificant. Substitution of vinal fiber for higher grade sulphite pulps results in newsprint paper which can be pro-



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essed and printed at appreciably higher speeds. The major value of vinal in pulp blends compared with other fortifying fibers is its compatibility, ease of dispersion based on a more rapid wetability.

Vinal Multifilaments

Vinal multifilament in 600 and 1200 denier 6 dpf is currently being produced on a pilot plant basis and is undergoing evaluation in this country in the industrial field. From the properties previously discussed the value of vinal multifilament for a number of industrial purposes will be self evident, particularly in relation to the coated fabric field. High modulus, high chemical resistance and excellent adhesion between fibrous and non-fibrous materials is a combination of properties that approaches the ideal for a wide range of end uses involving coated or bonded fabrics. It is axiomatic that a bonded fabric is of no more value than the bond itself. Although there are existing materials with high bonding ability, they are frequently subject to the degradative influence of decomposition compounds to which vinal is immune.

Vinal in multifilament form is now being used in automobile tires in the Far East and is under evaluation in a number of countries including the United States for this purpose. Fish nets, twine, ropes and sewing thread are also likely end uses for multifilament.

Monofilament

Also being manufactured on a pilot plant basis and evaluated in this country is a 500 d. monofilament. This material with a tenacity of 4.5-5 grams per denier with an elongation of 25% is under evaluation in protective netting, fishing lines, sewing thread and a variety of industrial uses.

Summary

From what has been said above, the versatility of polyvinyl alcohol as a base material for a family of textile fibers will have become evident and there is every reason to believe that through further research the range of fibers with commercial possibilities can be considerably expanded. Not discussed in this paper but in major production in Japan, is a vinal type fiber possessing a high degree of resiliency and general toughness which is largely sold on a dope dyed basis in the uniform trade. Other fibers undergoing a major evaluation include fine denier filament vinal of high tenacity with appreciably higher moisture regain than the hydrophobic fibers and with an externally pleasing hand and touch.

Orlon Tow (Continued from Page 42)

3. To prevent excessive cooling of the machine during shutdowns, and thus eliminate the need for long start-up periods. cooling can be turned off when downtime exceeds five minutes' duration.

Effect of Machine Speed

The shrinkage of high bulk yarns of Orlon acrylic tow processed on a Turbo Stapler is also influenced by machine speed. Increased machine speed, when the other influential factors are held constant, causes a decrease in yarn shrinkage (see Figure 4). For this reason sliver produced when the stapler is run at half speed for extensive intervals should be relaxed in the Turbo Fiber Setter to insure uniform yarn shrinkage. The unrelaxed portion of the high bulk blend must always be obtained at a standard set of operating conditions.

Textile News

New Polypropylene

AviSun polypropylene, a new thermoplastic said to be the lightest commercial plastic available with a density of 0.89 to 0.92, is described in a bulletin published by the manufacturer, AviSun Corp. The producer says the polypropylene, which can be made into monofilament and multifilament yarns, has outstanding tensile strength, temperature resistance, stress cracking resistance, stiffness, film transparency and surface gloss; recommends it for injection molding, extrusion, film, fiber and other applications; and expects immediate use in the industrial fiber market. *For a copy of the bulletin write the editors.*

New Canadian Plant

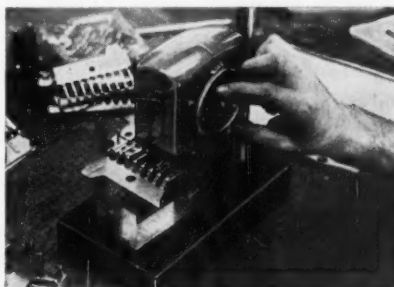
With its new Toronto plant completed, National Starch and Chemical Co. (Canada) Ltd. has begun production of vinyl copolymers and homopolymers in emulsion form, to be used for its own manufacture of adhesives and for sale to Canadian manufacturers of paper coating, textiles and other related products. The plant, which is built to allow for increases in capacity, is next to one of the company's adhesive manufacturing operations; a second adhesive plant is in Lachine, Quebec.

Belfast Division

Deering Milliken Research has set up a separate division for Belfast, the cotton fabric designated as "self-ironing" and said to be capable of hand wringing or spin drying without wrinkling. George Cocoros, former head of product development for Milliken, will head the new division. He has announced plans for large-scale trade and consumer advertising and sales promotion, plus expanded research.

Scott & Williams in Bruges

Scott & Williams is setting up a new plant in Bruges, Belgium to serve the Common European Market with its knitting machinery and provide service and parts. Company president, Dr. R. H. Whitehead said the move is intended to strengthen the company's competitive position in Western Europe, where dollar shortages and other barriers are favoring European companies making competitive machines. Until a new building can be constructed in Bruges, Scott & Williams will lease available space. A complete stock of parts for servicing Scott & Williams machines, including hoisery and outerwear types, will be made available as soon as practical, Whitehead said.



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An example of Uniformity. For uniformity in your **HARD CHROMIUM PLATING** buy the best protection possible. Our customers have learned to expect the best in **HARD CHROMIUM PLATING** when they buy **WALHARD**.

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Tel. OXford 5-2060

5-2061

THE
Kenyon
PIECE
DYEWORKS
INC.



"KENYON OF KENYON, RHODE ISLAND"

NEW FABRICS

Synthetic Nonwoven Felt

A nonwoven felt, made of synthetic fibers, has been successfully field-tested in a wide range of industries, according to Troy Blanket Mills. Troy Blanket produces Troyfelt from Dacron, Orlon and other fibers. It is made by mechanical interlocking of fibers, rather than by use of a chemical binding agent or a supporting fabric. It also is said to possess all the ordinary properties of natural fiber felts. Troyfelt has found wide application in electronics, shoes, dry-cleaning, laundry, railroad, and mining. For further information write the editors.

Wash-Wear Vinyl Cloth

"Burlskin," described as the first wash-and-wear vinyl fabric for apparel end use, is being introduced to garment manufacturers by the Vinyl Fabrics Division of Goodall-Sanford, Inc.

The new vinyl fabric can be laundered and dried in any type of normal home laundering and drying appliance or drip dried without harm to appearance, hand, color fastness or dimensional stability. For further information write the editors.

Long-Wearing Press Pad

A new long-wearing press pad made from Du Pont type 109 heat-resistant nylon staple and designed for use on all types of laundry presses has been introduced by Whitehouse Products. Designated as N-11 during its three years of development by Du Pont, type 109 nylon currently is used as padding for ironers. Its acceptance in use on ironers led Whitehouse to develop the new application for presses. The new padding is said to be long-wearing, cost less, give improved heat resistance, and better pressing to garments. For further information write the editors.

Light Nylon Raincoat

B. F. Goodrich Industrial Products Co. is manufacturing what it calls the lightest weight raincoat ever to be used as a regulation police raincoat. Made of Koroseal-coated nylon fabric, the new raincoat (in size 42) weighs only one pound, five ounces, compared with conventional police raincoat of between four and five pounds. The coat comes in its own carrying pouch. Cap cover, cape style, is available in matching material. For further information write the editors.

Disposable Clothing

General Scientific Equipment Co. is marketing a new line of low-cost disposal clothing for industrial, laboratory institutional and commercial use. The garments are soft, light in weight, and have the same comfort as woven cloth. As disposable items, they are sanitary. They are also fire-resistant, water repellent, lint free and can be autoclaved. For Bulletin No. 700 describing the new line, write the editors.

'Basketweave Back' Carpet

Bryce Canyon, the latest addition to the C. H. Masland & Son's carpet line, features a new all-jute "basketweave back." The new woven backing requires no "stuffer," simplifies weaving and eliminates the need for expensive back-sizing or latexing. The new back also is dimensionally stable. Available in 12 and 15-foot widths and a variety of decorator colors, the Bryce Canyon line retails for approximately \$15.95 per square yard. For further information write the editors.



NEWS AND COMMENT

Awards to Two TDI Members

Two members of the Textile Distributors Institute, Dan B. Fuller and A. E. Wullschleger, were recipients of the annual achievement awards of the Textile Veterans Association at a dinner in New York City on Oct. 8. Fuller is a vice president of J. P. Stevens & Co., Inc. Wullschleger is chairman of the board of Wullschleger & Co. Inc. Awards were also made at the dinner to Jack A. Goldfarb, chairman of the board of Union Underwear Co., and Benjamin P. Schoenfein, vice president of Bankers Trust Co.

In accepting the award, Fuller made an appeal for greater creativity and better merchandising in the textile industry. "Let's create and stimulate markets as other industries do," he said, "and let's stop destroying our markets by piracy and oversaturation. For those who are willing to make this effort and have the courage to go ahead, the rewards can be great."

Wullschleger, in his acceptance speech, described how, as a young textile technician, he came to America in 1902 intending to stay a year, and had instead remained for a lifetime. "America has been good to me," he said, "and I have tried to be good to America by fulfilling in good conscience my duties as a citizen; by pride in its accomplishments, and by striving to keep it the best and the greatest nation on earth. I am proud that I am an American citizen."

Wullschleger presented to the Textile Veterans Association one of the copies of a woven reproduction of Trumbull's painting of the signing of the Declaration of Independence. He had the picture woven on a jacquard loom by master weavers in Lyons, France during the 1920's.

Notice on Anticipation

To protect themselves from changes in anticipation rates, a number of textile distributors are making known their practices with regard to such rates by marking their invoices. These firms, according to Miss Hilda A. Wiedenfeld, executive director of the Textile Distributors Institute, are stamping the following clause on the face of their invoices: "Anticipation at 6% per annum will be allowed from ten days after date of invoice."

"In other words," Miss Wiedenfeld states, "the procedure they are following is, the above clause is

stamped on the face of the invoice and a slip is enclosed to call attention to these terms, which reads as follows:

"Please Mark Your Records for our Account

"Anticipation — Allowed from 10 days after date of invoice at 6% per annum. Excess anticipation will be charged back to your account

"Interest — Will be charged at 6% per annum if paid after date of maturity

"Your cooperation will be appreciated and will eliminate costly correspondence and clerical work."

New Locale for Golf Outing

The annual golf tournament of the Textile Distributors Institute next year will be shifted from the Shawnee Inn in Pennsylvania to the Concord Hotel, Kiamesha Lake, N. Y., it was announced last month by Samuel Schwartz, Cadillac Textiles, Inc., chairman of the 1960 golf tournament committee. The golf tournament will be staged for three days, June 22 to 24 at the Catskill resort.

The decision to hold the golf tournament at the Concord Hotel was made after a careful survey by the committee of the facilities and accommodations of a number of hotels within easy traveling distance of New York City.

Feit Joins Richelieu

Herbert Feit has joined Richelieu Fabrics, Inc., as vice president in charge of out-of-town sales, according to an announcement by Richard Deneau, president. Feit will also assist Deneau in styling woven novelty fabrics for the better dress and sportswear trades. Feit was previously with Barclay Fabrics Corp.

Fontana Joins TDI

Membership in the Textile Distributors Institute has been granted to Fontana Fabrics, 107 West 37 St., New York 18, N. Y., according to an announcement by Miss Hilda A. Wiedenfeld, executive director of the Institute. Fontana Fabrics, a distributor of men's, boys' and women's woven fabrics, is a division of Mill Fabrics Corp. James J. Pappas is department head; Saul Mond is sales manager, and Clifford Schwam is secretary.

"Leesona" New Name for Universal

Leesona Corp. is the new name for Universal Winding Co., of Providence, R.I.—"Leesona" has long been used as a trade name for some of the company's products. Stockholders recently voted to accept the new name on the recommendation of the board of directors.

"Universal Winding," reported Robert Leeson, president, "no longer is completely descriptive of the company's operations." He said that where once the

firm manufactured only winding machinery for the textile industry, today it also produces a variety of twisting machinery for textile manufacturers, including the bulk of machines used for stretch and textured yarns.

Mr. Leeson said that a successful product development program, combined with better industry conditions, resulted in greatly improved sales and earnings for the company in fiscal 1959. Net income, after taxes, amounted to \$1,227,623 or \$1.56 per share as compared with \$68,594 or 12 cents per share in fiscal 1958.

TEXTILE

NEWS BRIEFS

Clothing Imports Feared

An export men's clothing industry now developing in Japan constitutes "a very serious threat to the most important New York industry," Senator Kenneth B. Keating (Rep., N. Y.), stated in a recent television address. He said he had introduced a bill "to establish the principles in law that the

differential in wages and working conditions between this nation and a foreign competitor should be taken into account in America's foreign trade regulations and policies."

Ends Rayon Use in Tires

Mohawk Rubber Co., Akron, Ohio, has announced it is no longer using rayon cord in passenger tire production and has converted entirely to nylon. Company officials indicated that the increasing proportion of nylon tire production to the rayon type was the primary reason for the change.

TTMA Workshop Nov. 18

E. A. O'Neal, Jr., president of Chemstrand Corp., will be one of the principal speakers at the 1959 interim workshop of the Tufted Textile Manufacturers Association in Chattanooga, Tenn., on November 18. The one-day workshop program, at the Patten Hotel, will be centered around the future of the tufting industry. Addresses and panel discussions on the place of synthetic fibers in tufting, on research, manufacturing and merchandising in tufting are being arranged.

Textile Chemical Show

B. F. Goodrich Chemical Co. has introduced new products and processes involving textile chemicals to all phases of the textile industry, at a week-long exhibit in the Blue Room of the Sheraton-McAlpin Hotel, New York City, October 19-23. The displays were particularly directed to textile converters, finishers and merchandising people.

New Du Pont Division

Du Pont has set up an Industrial Marketing Division within its Textile Fibers Department. As of October 1st, it is responsible for all sales and merchandising efforts for Du Pont fibers in the industrial field. The new division will be in charge of activities of the Akron, Ohio and Philadelphia regional sales offices and for the industrial merchandising section at Wilmington. The director is Millard G. Gamble, who was manager of the Charlotte, N. C. regional sales office.

Piedmont Frames

Whitin Machine Works reports the following installations of its Piedmont frames which were introduced a year ago and are in full production at its Whitinsville, Mass., plant. At Blair Mills, Belton, S. C., 26 frames with 264 spindles each (total 6,864 spindles). At two American Thread Co. plants, 140 frames, totalling 43,680 spindles—60 frames at Tallapoosa, Ga., and 80 at Dalton, Ga.

Identification Tags

String tags for stating fiber and fabric content and manufacturer's name, in accordance with the new Labeling Act's requirements are available from Seaward-Edison Corp., New York printers and tag makers. The tags carry washing and cleaning information on the back, with a choice of four messages offered. The company has also devised a "Piggy Back" tag for mills that supply string content tags. These hook onto the string of the identification tag. For additional information write the editors.

NON-FLUID OIL

TRADE MARK REGISTERED

THE LEADING LOOM LUBRICANT

The majority of mills have adopted NON-FLUID OIL as the standard loom lubricant because its use enables them to secure maximum output of perfect goods.

Ordinary oils or greases drip, spatter and leak, getting on warps, woven goods and floors, resulting in higher "seconds," higher lubrication cost and highest application cost. NON-FLUID OIL prevents these losses by staying in bearings and lubricating instantly and positively until entirely consumed; its use assures peak production at lowest cost.

Send for Bulletin T-20 and a free sample of NON-FLUID OIL for a fair trial on your looms . . . You will quickly see why 7 out of 10 mills use NON-FLUID OIL regularly.

NEW YORK & NEW JERSEY LUBRICANT COMPANY

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WORKS: NEWARK, N. J.

Sou. Dist. Mgr.: Fred W. Phillips, Greenville, S. C.

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Chicago, Ill.

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NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture. So-called grease imitations of NON-FLUID OIL often prove dangerous and costly to use.

U. S. MAN-MADE FIBER PRICES

This schedule lists the prices of yarns, staple and tow as reported by the producers in October 1959. All prices are given as subject to change without notice.

CELLULOSIC YARNS

ACETATE

American Viscose Corp.

Current Prices

Effective March 13, 1959

Bright and Dull

* Intermediate Twist

| Denier & Filaments | Cones & 4-6 Lb. Tubes | Twister Tubes | Warps | Spinning Cones | Twist Warps |
|--------------------|-----------------------|---------------|--------|----------------|-------------|
| 40/11 | ..... | ..... | ..... | ..... | ..... |
| 45/11 | ..... | ..... | ..... | ..... | ..... |
| 55/14 | \$.99 | \$.97 | \$1.00 | ..... | \$1.14 |
| 75/20 | .95 | .93 | .96 | ..... | 1.03 |
| 100/28 | .91 | .89 | .92 | \$.89 | .87 |
| 120/32 | .82 | .80 | .83 | ..... | .86 |
| 150/41 | .74 | .73 | .75 | ..... | .77 |
| 200/54 | .70 | .69 | .71 | ..... | .70 |
| 300/80 | .66 | .65 | .67 | ..... | .67 |

* Standard Twist 2 $\frac{1}{2}$ Additional.

Terms: Net 30 Days.

Celanese Corp. of America

Current Prices

Effective March 10, 1959

Bright & Dull

| Denier and Filaments | Intermediate Twist | | 4-Pound Cheeses | | Spinning Twist | | O Tubes |
|----------------------|--------------------|--------|-----------------|-------|----------------|-------|---------|
| | Cones | Beams | Cones | Beams | Cones | Beams | |
| 45/13 | \$1.12 | \$1.13 | ..... | ..... | ..... | ..... | ..... |
| 75/20 | .95 | .96 | ..... | .89 | ..... | .90 | .79 |
| 75/50 | .97 | .98 | ..... | ..... | ..... | .92 | .84 |
| 100/26-40 | .91 | .92 | ..... | .85 | ..... | .86 | .77 |
| 120/40 | .82 | .83 | ..... | .76 | ..... | .77 | ..... |
| 150/40 | .74 | .75 | .74 | .69 | ..... | .70 | .66 |
| 200/52 | .70 | .71 | ..... | .66 | ..... | .67 | ..... |
| 300/80 | .66 | .67 | ..... | .62 | ..... | .63 | .60 |
| 450/120 | .66 | .67 | ..... | .62 | ..... | .63 | ..... |
| 600/160 | .65 | .66 | ..... | ..... | ..... | ..... | ..... |
| 900/80-240 | .63 | .64 | ..... | ..... | ..... | ..... | .61 |

150 Denier 12-TM Tubes73
2-Pound Cheeses01 Less Than 4-Pound Cheeses
2-BU and 4-BU Tubes Same Price as 4 and 6-Lb. Cones

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A.
Prices subject to change without notice.

All previous prices withdrawn.
Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgements of orders.

Celaperm Filament Yarn Prices

| Denier and Filaments | Intermediate Twist | | Spinning Twist | |
|----------------------|--------------------|--------|----------------|--------|
| | Cones | Beams | Cones | Beams |
| 55/15 | \$1.37 | \$1.38 | \$1.31 | \$1.32 |
| 75/20 | 1.34 | 1.35 | 1.28 | 1.29 |
| 100/26 | 1.28 | 1.29 | 1.22 | 1.23 |
| 120/40 | 1.19 | 1.20 | 1.13 | 1.14 |
| 150/40 | 1.11 | 1.12 | 1.06 | 1.07 |
| 200/52 | 1.05 | 1.06 | 1.01 | 1.02 |
| 300/80 | 1.01 | 1.02 | .97 | .98 |
| 450/120 | .99 | 1.00 | .95 | .96 |
| 600/160 | .97 | .98 | ..... | ..... |
| 900/80 | .94 | ..... | ..... | ..... |

Celaperm Black Yarn Prices

Effective March 11, 1955

| Denier and Filaments | Intermediate Twist | | Spinning Twist | |
|----------------------|--------------------|--------|----------------|--------|
| | Cones | Beams | Cones | Beams |
| 55/15 | \$1.17 | \$1.18 | \$1.11 | \$1.12 |
| 75/20 | 1.14 | 1.15 | 1.08 | 1.09 |
| 100/26 | 1.08 | 1.09 | 1.02 | 1.03 |
| 120/40 | .99 | 1.00 | .93 | .94 |
| 150/40 | .91 | .92 | .86 | .87 |
| 200/52 | .85 | .86 | .81 | .82 |
| 300/80 | .81 | .82 | .77 | .78 |
| 450/120 | .79 | .80 | .75 | .76 |
| 600/160 | .77 | .78 | ..... | ..... |
| 900/80 | .74 | ..... | ..... | ..... |

3 to 5 Turns on Cones or Beams — \$.02 Additional

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Acetate

| Denier & Filament | Zero Twist | | Low Twist | | Intermediate Twist | | | |
|-------------------|------------|--------|-----------|-------|---------------------|--------------------|-------|--------|
| | Tubes | Beams | Cones | Beams | 2 & 4 Lb. 5/8" Tbs. | 4 & 6 Lb. Tw. Tbs. | Cones | Beams |
| 40-13 | \$1.06 | \$1.13 | ..... | ..... | ..... | ..... | ..... | ..... |
| 45-13 | .94 | 1.02 | ..... | ..... | ..... | ..... | ..... | ..... |
| 55-18 | .82 | .86 | ..... | .91 | ..... | ..... | \$.99 | \$1.00 |
| 55-24 | .82 | .86 | ..... | .91 | ..... | ..... | .93 | .95 |
| 75-24 | .79 | .89 | ..... | .90 | ..... | ..... | .95 | .97 |
| 75-50 | ..... | ..... | ..... | .92 | ..... | ..... | .89 | .91 |
| 100-32 | .77 | .85 | ..... | .86 | ..... | ..... | .81 | .82 |
| 120-50 | .73 | .76 | ..... | .77 | ..... | ..... | .74 | .75 |
| 150-40 | .66 | .69 | \$.69 | .70 | .74 | .70 | .70 | .71 |
| 200-60/64 | .65 | ..... | .66 | .67 | .70 | .70 | .70 | .71 |
| 240-80 | ..... | ..... | .67 | ..... | ..... | ..... | .66 | .67 |
| 300-80 | .60 | .62 | .62 | .63 | .66 | .66 | .66 | .67 |
| 450-120 | .61 | ..... | .62 | .63 | .66 | .66 | .66 | .67 |
| 600-160 | ..... | ..... | ..... | ..... | .63 | .63 | .63 | .64 |
| 900-44 | ..... | ..... | ..... | ..... | .63 | .63 | .63 | .64 |
| 900-240 | .61 | ..... | ..... | ..... | .61 | .61 | .61 | .62 |
| 1800-88 | ..... | ..... | ..... | ..... | .61 | .61 | .61 | .62 |
| 2700-132 | ..... | ..... | ..... | ..... | .61 | .61 | .61 | .62 |
| 3000-210 | ..... | ..... | ..... | ..... | .61 | .61 | .61 | .62 |

(A) Regular Twist (2.9 and 5 T.P.I.)—add \$.02 to Intermediate Twist Price.

(B) 1 lb. % Tubes—add \$.02 to 2 & 4 lb. % Tube Price.

Color-Sealed

| Denier & Filament | Zero Twist | | Low Twist | | Intermediate Twist | | | |
|--|------------|---------|-----------|--------|--------------------|--------|--------|--|
| | Tubes | Beams | Cones | Beams | Twisted Tubes | Cones | Beams | |
| 55-18 | \$1.245 | \$1.315 | | \$1.32 | \$1.35 | \$1.35 | \$1.37 | |
| 75-24 | 1.18 | 1.28 | | 1.29 | 1.32 | 1.32 | 1.35 | |
| 100-32 | 1.14 | | | 1.23 | 1.26 | 1.26 | 1.28 | |
| 150-40 | 1.03 | 1.06 | 1.06 | 1.07 | 1.10 | 1.11 | 1.12 | |
| 200-64 | 1.00 | | | 1.02 | 1.04 | 1.05 | 1.06 | |
| 300-80 | | .97 | | .98 | 1.00 | 1.01 | 1.02 | |
| (A) Regular Twist—Add \$.02 to Intermediate Twist Price. | | | | | | | | |

(A) Regular Twist—Add \$.02 to Intermediate Twist Price.

Black

| Denier & Filament | Zero Twist | | Low Twist | | Intermediate Twist | | | |
|-------------------|------------|---------|-----------|-------|---------------------|--------------------|-------|-------|
| | Tubes | Beams | Cones | Beams | 2 & 4 Lb. 5/8" Tbs. | 4 & 6 Lb. Tw. Tbs. | Cones | Beams |
| 55-18 | \$1.045 | \$1.115 | ..... | ..... | ..... | ..... | ..... | ..... |
| 75-24 | .98 | 1.08 | ..... | 1.09 | 1.12 | 1.12 | 1.14 | 1.15 |
| 100-32 | .94 | ..... | ..... | 1.03 | 1.06 | 1.06 | 1.08 | 1.09 |
| 150-40 | .83 | .86 | .86 | .87 | .91 | .91 | .92 | .92 |
| 200-60 | .80 | ..... | .81 | .82 | .85 | .85 | .86 | .86 |
| 300-80 | .75 | .77 | .77 | .78 | .81 | .81 | .81 | .82 |
| 450-120 | ..... | ..... | ..... | .76 | .79 | .79 | .79 | .80 |
| 600-160 | ..... | ..... | ..... | .74 | .77 | .77 | .77 | .78 |
| 900-240, 44 | ..... | ..... | ..... | .74 | .74 | .74 | .74 | .75 |

(A) Regular Twist (2.9 and 5 T.P.I.)—add \$.02 to Int. Twist Price.

(B) 1 lb. % Tubes—add \$.02 to 2 & 4 lb. % Tube Price.

Specialty Yarns

Type 20

Same Price as Regular Yarn

Type C

Same Price as Regular Yarn

Thick & Thin

| Denier & Filament | Natural | | Black | | Color-Sealed | |
|-------------------|---------|--------|--------|--------|--------------|--------|
| | Cones | Beams | Cones | Beams | Cones | Beams |
| 100-22 Int. Twist | \$1.34 | \$1.35 | \$1.47 | \$1.48 | \$1.67 | \$1.68 |
| 200-64 Int. Twist | 1.05 | ..... | 1.15 | ..... | 1.35 | ..... |
| 200-64 Reg. Twist | 1.08 | 1.09 | 1.17 | 1.21 | ..... | ..... |

Terms: Net 30 days. Subject to changes without notice.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective March 13, 1959

"Estron" Yarn, Bright or Dull — White

| Denier & Filament | Regular Twist | | Intermediate Twist | | Low Twist | | Zero Twist | | Triest Beams | |
|-------------------|---------------|--------|--------------------|--------|-----------|--------|------------|------------|--------------|-------|
| | Cones | Beams | Cones | Beams | Cones | Beams | Tubes | Spun Tubes | Zero Twist | Beams |
| 55/13 | \$1.01 | \$1.02 | \$0.99 | \$1.00 | \$0.93 | \$0.94 | \$0.82 | \$0.87 | \$0.86 | ..... |
| 75/19 | .97 | .98 | .95 | .96 | .89 | .90 | ..... | .90 | ..... | ..... |
| 75/49 | .99 | 1.00 | .97 | .98 | ..... | ..... | ..... | ..... | ..... | ..... |
| 100/25 | .93 | .94 | .91 | .92 | .85 | .86 | ..... | ..... | ..... | ..... |
| 120/30 | .84 | .85 | .82 | .83 | .76 | .77 | ..... | ..... | ..... | ..... |
| 150/38 | .76 | .77 | .74 | .75 | .69 | .70 | .66 | ..... | ..... | ..... |
| 200/50 | .72 | .73 | .70 | .71 | .66 | .67 | ..... | ..... | ..... | ..... |
| 300/75 | .68 | .69 | .66 | .67 | .62 | .63 | .60 | ..... | ..... | ..... |
| 450/114 | .68 | .69 | .66 | .67 | .62 | .63 | ..... | ..... | ..... | ..... |
| 600/158 | .67 | .68 | .65 | .66 | .62 | .63 | ..... | ..... | ..... | ..... |
| 900/230 | .65 | .66 | .63 | .64 | ..... | ..... | .61 | ..... | ..... | ..... |
| Heavier | ..... | ..... | ..... | ..... | ..... | ..... | .56 | ..... | ..... | ..... |

Current Prices—December 19, 1955

"Chromspun"—Standard Colors (Except Black)

| Denier & Filament | Regular Twist | | Intermediate Twist | | Low Twist | |
|-------------------|---------------|--------|--------------------|--------|-----------|--------|
| | Cones | Beams | Cones | Beams | Cones | Beams |
| 55/13 | \$1.39 | \$1.40 | \$1.37 | \$1.38 | \$1.31 | \$1.32 |
| 75/19 | 1.38 | 1.37 | 1.34 | 1.35 | 1.28 | 1.29 |
| 100/25 | 1.30 | 1.31 | 1.28 | 1.29 | 1.22 | 1.23 |
| 150/38 | ..... | ..... | 1.11 | 1.12 | 1.06 | 1.07 |
| 300/75 | ..... | ..... | 1.01 | 1.02 | .97 | .98 |
| 450/114 | ..... | ..... | .99 | 1.00 | .95 | .96 |
| 900/230 | ..... | ..... | .94 | .95 | ..... | ..... |

Current Prices

"Chromspun"—Black

| Denier & Filament | Regular Twist | | Intermediate Twist | | Low Twist | |
|-------------------|---------------|--------|--------------------|--------|-----------|--------|
| | Cones | Beams | Cones | Beams | Cones | Beams |
| 55/13 | \$1.19 | \$1.17 | \$1.17 | \$1.18 | \$1.12 | \$1.13 |
| 75/19 | 1.16 | 1.14 | 1.15 | 1.15 | 1.09 | 1.10 |
| 100/25 | 1.10 | 1.08 | 1.09 | 1.09 | 1.03 | 1.04 |
| 150/38 | .93 | .91 | .92 | .92 | .87 | .87 |
| 300/75 | .87 | .85 | .86 | .86 | .82 | .82 |
| 450/114 | .81 | .81 | .82 | .82 | .78 | .78 |
| 900/230 | .76 | .74 | .75 | .75 | ..... | ..... |

Prices are subject to change without notice.

Prices on special items quoted on request.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in continental United States except Alaska. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

* "Estron" is a trade-mark of the Eastman Kodak Company.

* Chromspun is a trade-mark of the Eastman Kodak Company.

RAYON

American Bemberg

Current Prices

Regular Production Reel Spun Yarn

| Den/Fil | No Turn | | Turned* | | 8 1/2 Turns | | High Turn Skeins & Cones | |
|----------|---------|--------|---------|-------|-------------|-------|--------------------------|----------|
| | Skeins | Cones | Skeins | Cones | Turns | Turns | 12 Turns | 15 Turns |
| 40/30 | \$1.49 | \$1.95 | ..... | ..... | ..... | ..... | ..... | \$2.08 |
| 50/36 | 1.29 | 1.55 | ..... | ..... | ..... | ..... | ..... | 1.85 |
| 65/45 | 1.22 | 1.38 | ..... | ..... | ..... | ..... | ..... | 1.66 |
| 76/60** | 1.11 | 1.25 | ..... | ..... | ..... | ..... | ..... | \$1.61 |
| 100/74** | 1.02 | 1.15 | ..... | ..... | ..... | ..... | ..... | \$1.53 |
| 125/90 | 1.01 | 1.12 | ..... | ..... | ..... | ..... | ..... | 1.40 |
| 150/120 | .99 | 1.08 | ..... | ..... | ..... | ..... | ..... | 1.45 |
| 300/225 | ..... | 1.01 | ..... | ..... | ..... | ..... | ..... | 1.51 |
| 900/372 | ..... | .91 | ..... | ..... | ..... | ..... | ..... | 1.14 |
| 1800/744 | ..... | .91 | ..... | ..... | ..... | ..... | ..... | ..... |

* Turn includes twists up to 6 turns on 40 and 50 denier, and up to 5 turns on heavier deniers.

** Spun Dyed Cupracolor Black 15¢ per lb. extra.

"44" HH Spool Spun Yarn

| Den/Fil | No Turn | | 5 Turn | | 8 Turn | | 12 Turn | |
|---------|---------|--------|--------|--------|--------|-------|---------|-------|
| | Tubes | Beams | Cones | Beams | Cones | Beams | Cones | Beams |
| 40/30 | \$1.35 | \$1.35 | ..... | ..... | ..... | ..... | ..... | ..... |
| 50/36 | 1.05 | 1.05 | ..... | ..... | ..... | ..... | ..... | ..... |
| 65/45 | 1.13 | ..... | ..... | ..... | ..... | ..... | ..... | ..... |
| 75/45* | 1.04 | ..... | \$1.15 | \$1.15 | \$1.38 | 1.38 | \$1.46 | ..... |
| 100/60* | .96 | ..... | 1.10 | 1.10 | 1.30 | 1.30 | 1.38 | ..... |
| 125/90 | .91 | ..... | 1.06 | 1.06 | ..... | ..... | ..... | ..... |
| 150/90* | .83 | ..... | .87 | .87 | 1.21 | 1.21 | 1.30 | ..... |
| 150/120 | .87 | ..... | ..... | ..... | .99 | ..... | ..... | ..... |

* Available also in Spun Dyed Cupracolor Black at 15¢ per lb. extra.

"44" HH "Parfe" Spool Spun Yarn

| Den/Fil | No Turn | | 5 Turn | | 8 Turn | | 12 Turn | |
|---------|---------|--------|--------|-------|--------|-------|---------|-------|
| | Cones | Beams | Cones | Beams | Cones | Beams | Cones | Beams |
| 50/36 | \$1.60 | \$1.85 | ..... | ..... | ..... | ..... | ..... | ..... |
| 75/45 | 1.48 | 1.58 | ..... | ..... | ..... | ..... | ..... | ..... |
| 100/60 | 1.38 | 1.48 | ..... | ..... | ..... | ..... | ..... | ..... |
| 150/90 | 1.21 | 1.28 | ..... | ..... | ..... | ..... | ..... | ..... |
| 300/120 | 1.21 | 1.28 | ..... | ..... | ..... | ..... | ..... | ..... |

Nub-Lite (Short Nubbi)

| Code | Den/Fil | 2 1/2 Turn | | 5 Turn | | 8 Turn | |
|--------|---------|------------|--------|---------|--------|---------|--------|
| | | Natural | Cones* | Natural | Cones* | Natural | Cones* |
| 1515 | 160/90 | ..... | ..... | ..... | \$1.50 | ..... | ..... |
| 1519** | 155/90 | ..... | ..... | ..... | 1.50 | ..... | ..... |
| 2008 | 200/120 | ..... | ..... | ..... | 1.11 | ..... | ..... |
| 3002 | 315/180 | ..... | ..... | ..... | ..... | ..... | ..... |
| 4011 | 410/224 | ..... | ..... | ..... | ..... | ..... | ..... |
| 6001 | 600/360 | ..... | ..... | ..... | ..... | ..... | ..... |
| 8001 | 860/450 | ..... | ..... | ..... | ..... | ..... | ..... |

* Basic price for cones when dyed. Dyed Colors 30 and 35 cents above basic price. Prices based on 200 lb. dyed lots only. Prices for natural yarn skeins same as natural cone prices.

** Code 1519 can be run in warp or filling.

CUPIONI Type B

| Code | Den/Fil | 2 1/2 Turn | |
|------|---------|------------|--------|
| | | Cones | Beams |
| 9650 | 70/45 | ..... | \$1.69 |
| 9660 | 100/60 | ..... | 1.53 |
| 1545 | 150/90 | ..... | 1.30 |
| 8730 | 285/135 | ..... | 1.15 |
| 9792 | 450/225 | ..... | 1.15 |
| 9814 | 600/372 | ..... | 1.12 |
| 9837 | 940/372 | ..... | 1.02 |

* Spun Dyed Cupracolor is spun 150, 285, and 940 deniers at 35¢ per pound extra. Cupracolor Black Comes in all deniers.

STRATA SLUB

| Code | Den/Fil | Turned Cones | | Price |
|------|----------|--------------|-------|--------|
| | | Cones | Beams | |
| 9747 | 275/225 | ..... | 3 1/2 | \$1.25 |
| 9798 | 450/372 | ..... | 2 1/2 | 1.15 |
| 9823 | 600/372 | ..... | 2 1/2 | 1.10 |
| 9847 | 960/372 | ..... | 2 1/2 | 1.02 |
| 9885 | 1290/372 | ..... | 1 1/2 | 1.00 |
| 9904 | 2680/744 | ..... | 1 1/2 | 1.00 |

* Spun Dyed Cupracolor is spun in 600 and 960 deniers at 35¢ per pound extra.

FLAIKONA

| Code | Den/Fil | Turned Cones | Price |
|------|----------|--------------|--------|
| 9669 | 150/148 | 2 1/2 | \$1.35 |
| 9769 | 300/224 | 2 1/2 | 1.25 |
| 9782 | 450/270 | 2 1/2 | 1.05 |
| 9809 | 600/360 | 2 1/2 | 1.05 |
| 9840 | 900/450 | 2 1/2 | 1.00 |
| 9924 | 2000/744 | 2 1/2 | .95 |

* Spun Dyed Cupracolor Black 35¢ per pound extra.

Terms: Net 30 days, F. O. B. shipping point. Minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight allowed to Memphis, Tennessee. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F. O. B. delivery point.

American Enka Corp.

Current Prices

Effective June 29, 1959

Standard Quality Yarns

Standard Quality Rayon Yarns

| Den./Fil. | Luster | NATURAL | | Weaving | | Skeins | | Knitting | | |
|-------------------------|---------|------------|-----|----------------------|-------|--------|-------|----------|-------|-------|
| | | Turns | | Cones | Beams | Long | Short | Cakes | Cones | Tubes |
| 50/18 | E | 5 | S | | | | | | 1.63 | |
| 50/20 | B | 2.5 | S | | | | | 1.52 | | |
| 75/10 | B | 3 | S&Z | | | | | 1.02 | | |
| 75/18 | E | 4 | S | | | | | | 1.14 | |
| 75/30 | B | 2.5, 4S | &Z | 1.14 | 1.14 | 1.22 | 1.31 | 1.02 | | |
| 75/30 | B | 8 | S | 1.24 | | 1.39 | 1.49 | 1.12 | 1.24 | 1.29 |
| 75/45 | P, E | 2.5, 4.5S | &Z | 1.14 | 1.14 | 1.22 | 1.31 | 1.02 | 1.14 | |
| 75/60 | B, P | 3, 4 | Z | 1.16 | | | | 1.04 | | |
| 100/14 | B | 3 | S&Z | | | | 1.15 | .90 | | |
| 100/40 | B, E | 12 | S | | | | | | 1.29 | |
| 100/40 | B, P, E | 4.5 | S&Z | | .98 | | | | .98 | |
| 100/40 | B | 6 | S | 1.17 | | 1.26 | 1.36 | 1.09 | | |
| 100/40 | B, P | 2.5, 4S | &Z | .98 | .98 | 1.07 | 1.15 | .90 | | |
| 100/60 | B | 4 | S&Z | | | | | .90 | | |
| 100/60 | E | 2.5 | S | 1.00 | 1.00 | | | .92 | | |
| 125/40 | B, P | 3 | Z | | | | | .87 | | |
| 125/50 | E | 3 | S | .96 | .96 | | | | .90 | |
| 150/40 | E | 3 | Z | .84 | | | | | | |
| 150/40 | B, P, E | 2.1, 3S | &Z | .82 | .82 | .91 | .98 | .78 | .82 | |
| 150/40 | B, E | 5 | S&Z | .90 | .90 | 1.10 | 1.20 | .86 | | |
| 150/40 | B, P, E | 8 | S&Z | .95 | .95 | 1.15 | 1.25 | .91 | | |
| 150/90 | E | 2.1 | S&Z | .83 | .83 | | | .79 | | .94 |
| 200/40 | P | 3 | Z | .81 | .81 | .90 | .97 | .77 | .81 | |
| 200/40 | B | 8 | S | | | | | .94 | .94 | |
| 250/60 | P, E | 2, 4 | Z | | | .89 | 1.06 | .98 | .80 | |
| 300/30 | B | 3 | S | .81 | .85 | | | | | |
| 300/50 | B, E | 3 | S | .73 | .76 | | | | | |
| 300/60, 120 | B, P, E | 2.1 | S&Z | .73 | .73 | .79 | .86 | .71 | .73 | |
| 300/60 | B | 3.5 | S | .73 | .73 | .79 | .86 | .71 | | |
| 300/60 | B | 6 | S | .83 | .83 | | .94 | .81 | | |
| 300/40, 120H.T. | B | 2.5, 3, 4S | | .75 | .75 | | | .73 | | |
| 450/80 | B, E | 3 | S | .69 | .71 | .76 | .83 | .67 | | |
| 600/80 | B, E | 3 | S | .73 | .75 | | | | | |
| 600/120 | B | 3 | S | .69 | .71 | .76 | .83 | .67 | | |
| 900/120 | B | 3.4 | S | .69 | .71 | .76 | .83 | .67 | | |
| 900/120H.T. | B | 3.6 | S | .71 | .71 | | | .69 | | |
| B = Briglo | | | | E = Englo (Dull) | | | | | | |
| P = Periglo (Semi-Dull) | | | | H.T. = High Tenacity | | | | | | |

B = Briglio

P = Periglio (Semi-Dull)

E = Englo (Dull)

H.T. = High Tenacity

Jetspun® (Colored Yarns)

| Den./Fil. | Tenacity | Turns | Weaving | | Colors |
|-----------|----------|-------|---------|--------|--------|
| | | | Cones | Beams | |
| 100/40 | Regular | 2.5S | \$1.35 | \$1.35 | All |
| 200/40 | Regular | 2.1S | 1.17 | 1.17 | All |
| 300/40 | Regular | 1.8S | 1.28 | 1.28 | All |
| 300/40 | Regular | 3.4S | 1.09 | 1.09 | All |
| 300/120 | Regular | 2.1S | 1.09 | 1.09 | All |
| 450/80 | Regular | 3.0S | 1.05 | 1.05 | All |
| 600/80 | Regular | 3.4S | 1.04 | 1.04 | All |
| 300/40 | High | 3.4S | 1.11 | 1.11 | All |
| 600/80 | High | 3.4S | 1.07 | 1.07 | All |
| 900/120 | High | 3.4S | 1.06 | 1.06 | All |

® Registered Trade Mark for American Enka Solution-dyed Rayon Yarn.

Skyloft (Lofted Rayon Filament Yarns)

Natural and Jetspun®

| Denier | Denier per Filament | Twist | Cones or Tubes | | Other Colors |
|--------|---------------------|--------|----------------|--------|--------------|
| | | | Natural | Black | |
| 1000 | 7.5 | 3.5S | \$8.82 | \$1.17 | \$1.17 |
| 2200 | 15 | 3.5S&Z | .67 | .77 | .84 |
| 2700 | 15 | 3.5S&Z | .67 | .77 | .84 |
| 4300 | 15 | 3.0S&Z | .66 | .76 | .83 |
| 5300 | 15 | 3.0S&Z | .65 | .75 | .82 |

American Viscose Corp.

Effective June 23, 1959

Graded Yarns

| Denier | Filament | Type | Regular Turns | | Short Skeins | Long Skeins | Cones Tubes | Beams Spoils | Cakes |
|-----------|----------|---------------|---------------|------|--------------|-------------|-------------|--------------|-------|
| 50 26 | | Bright & Dull | \$ | .... | \$1.62 | \$1.59 | \$1.59 | \$1.48 | |
| 60 10 | | Bright | | | | 1.44 | .... | 1.33 | |
| 75 10-30 | | Bright | 1.31 | 1.22 | 1.14 | 1.14 | 1.02 | | |
| 75 30 | | Dull | | | 1.14 | 1.14 | 1.02 | | |
| 100 14-40 | | Bright | 1.15 | 1.07 | .98 | .98 | .90 | | |
| 100 60 | | Dull | .... | .... | 1.00 | 1.00 | .92 | | |

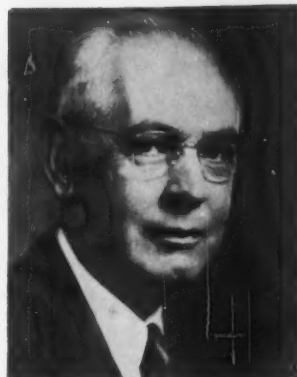
Jacobs Receives Award

The Fiber Society presented its first Distinguished Service Award on September 10 to Julian S. Jacobs, recently retired as editor of the Textile Research Journal. The society also honored 15 past presidents and a past secretary with formal "certificates of appreciation."

Elected as members of the society at its two-day fall meeting were: Dr. William Sprague Barnard, Chicopee Manufacturing Corp.; Edmund M. Buras, Jr., Harris Research Laboratories; Dr. L. A. Cox, Johnson and Johnson Limited; Dr. R. H. Gillespie, Institute of Paper Chemistry; Dr. Daniel Gintis, Du Pont Co.; Dr. W. L. Ingmanson, Institute of Paper

Chemistry; Dr. Alfred H. Nissan, Rensselaer Polytechnic Institute; Dr. D. R. Peterson, Chicopee Manufacturing Corp.; Dr. Frederick H. Sexsmith, also of Chicopee; Richard D. Smith and Helen G. Sommar, both of B. F. Goodrich Co., and Joseph A. Truitt, American Viscose Corp.

Julian S. Jacobs



Personnel Notes

Miss Jeanne Pierre has joined Papert & Free, Inc. as vice president in charge of merchandising and promotion.

William M. Kloth has been appointed president and a member of the board of directors of Pellon Corp.

Peter T. Barrett has been named vice president and technical director of Fiber Industries, Inc. and **Kenneth Hewison-Smith**, vice president in charge of marketing of Fiber Industries, has been elected a member of the company's board of directors.

Robert E. Brouillard and **H. Alison Webb** have been appointed sales managers for pigments and dyestuffs respectively in the Dyestuff and Chemical Div. of General Aniline & Film Corp.

Richard A. Herard has been appointed southern representative for David Gessner Co.

Henry A. Wells has been appointed assistant sales manager of the southern district of Interchemical Corp.'s color & chemicals division, and **Robert E. Hardy** has been appointed technical service representative for dyestuffs in the southern district. In the company's industrial relations department **Charles H. Frost** has been appointed manager.

Dr. Ernst A. Wolff has been appointed technical manager of the chemical specialties division of Ciba Co., Inc.

Dr. G. W. Stanton has been appointed assistant to the director of Dow Chemical Co.'s western division research department. **Alfred Greenfield** has been transferred from his position as product manager for Zefran acrylic fiber from New York to the textile fibers department at Williamsburg, Va. and **Thomas A. Shem**, advertising manager at Williamsburg has been transferred to New York City. **James Jones** has been made product manager for Rovana.

The ULTIMATE in PACKAGE DRYERS



GASTON COUNTY-AVESTA recirculating RAPID DRYERS are built under U. S. Patent No. 2,567,940 and R. E. 24,260 through a license agreement with Avesta Company in Sweden.

Custom built to individual mill requirements in "Single Kier" or "Multiple Kier" arrangements for 250 to 1,000 or more pounds of yarn. Design determined by package carriers in customer's plant regardless of make.

CONSTRUCTION

Built to ASME standards. Piping systems, heater housings, condenser housings, reversing valves and drying kiers made of stainless steel. Kier lid of stainless or carbon steel as specified. Heater and condenser coils made of heavy cupro-nickel alloy tubing for long service life.

Send for detailed technical data and drying cycles based on your production.

ADVANTAGES

1. Better yarn quality
2. Short drying cycles
3. Completely automatic operation
4. Low labor costs
5. Low power consumption
6. Low steam consumption
7. Eliminates costly air filters
8. No contamination from atmosphere
9. Eliminates expulsion of hot air into dyehouse
10. Allows more efficient use of package carriers
11. Accelerates flow of material through dyehouse
12. Faster delivery of finished product to customer
13. Allows smaller inventory of finished goods
14. Reduces overall costs of dyehouse operation

GASTON COUNTY



DYEING MACHINE CO.

Stanley

Gaston County Dyeing Machine Co.
Hoboken, N. J., G. Lindner, Mgr.
Terminal Bldg., 68 Hudson St.

Albert P. March
Whitemarsh, Pa.
Philadelphia AD 3-2901

North Carolina

A. R. Breen, 80 E. Jackson Blvd., Chicago, Ill.
J. R. Angel, 1104 Mortgage Guarantee Bldg., Atlanta, Ga.

The Rudel Machinery Co., Ltd.
614 St. James St. W., Montreal
260 Fleet St. E., Toronto

| | | | | | | |
|----------------|--------------------|-------|-------|-------|-------|-------|
| 150 24-40 | Bright | .98 | .91 | .82 | .82 | .78 |
| 150 40 | Semi-Dull | .98 | .91 | .82 | .82 | .78 |
| 150 40 | Dull | ..... | ..... | .82 | .82 | .78 |
| 150 90 | Dull | ..... | ..... | .83 | .79 | ..... |
| 200 10-44 | Bright | .97 | .90 | .81 | .81 | .77 |
| 250 60 | Semi-Dull & Dull | .96 | .89 | .80 | .80 | .77 |
| 300 15 | Bright | ..... | .82 | .78 | .78 | ..... |
| 300 30 | Dull Flat Filament | ..... | ..... | ..... | .85 | ..... |
| 300 44 | Bright & Dull | .86 | .79 | .73 | .73 | .71 |
| 300 234 | Dull | ..... | ..... | .83 | ..... | .81 |
| 375 60 | Bright | ..... | ..... | .72 | .72 | ..... |
| 450 60-100 | Bright | ..... | .76 | .69 | .71 | .67 |
| 600 100 | Bright & Dull | ..... | .76 | .69 | .71 | .67 |
| 900 50-100-150 | Bright | ..... | .76 | .69 | .71 | .67 |
| 1200 75 | Bright | ..... | .76 | .69 | .71 | ..... |
| 2700 150 | Bright | ..... | .76 | .69 | .71 | ..... |

Extra Turns Per Inch

| | | | | | | |
|---------|------------------|--------|--------|--------|--------|---------|
| 75 30 | Bright 6-Turns | \$1.49 | \$1.39 | \$1.24 | \$1.24 | \$ |
| 100 40 | Bright 6-Turns | 1.36 | 1.26 | 1.17 | 1.17 | 1.09 |
| 150 40 | Bright 6-Turns | 1.20 | 1.10 | .90 | .90 | .88 |
| 200 44 | Bright 6-Turns | ..... | 1.01 | .96 | .96 | ..... |
| 300 15 | Bright 5-Turns | ..... | ..... | .86 | .86 | ..... |
| 300 44 | Bright 4.3-Turns | ..... | ..... | .81 | ..... | .79 |
| 300 44 | Bright 6-Turns | .94 | .87 | .86 | .86 | .84 |
| 300 120 | Rayflex 6-Turns | ..... | ..... | .93 | .93 | ..... |
| 600 30 | Bright 5-Turns | ..... | .84 | .82 | .82 | .80 |

Rayflex Yarns

| | | | | | | |
|------------|---------|---------|---------|--------|--------|--------|
| 75 30 | Rayflex | \$ | \$ | \$1.22 | \$1.22 | \$1.13 |
| 100 40 | Rayflex | ..... | ..... | 1.07 | 1.07 | .99 |
| 150 40-60 | Rayflex | ..... | ..... | .85 | .85 | .81 |
| 200 75 | Rayflex | ..... | ..... | .84 | .84 | .80 |
| 300 60-120 | Rayflex | ..... | ..... | .75 | .75 | .73 |
| 450 120 | Rayflex | ..... | ..... | .71 | .71 | .69 |
| 600 234 | Rayflex | ..... | ..... | .71 | .71 | .69 |
| 900 350 | Rayflex | ..... | .78 | .71 | .71 | .69 |

Thick & Thin Yarns

| | | | | | | |
|-----------|---------------|---------|---------|--------|---------|---------|
| 150 40-90 | Bright & Dull | \$ | \$ | \$1.18 | \$ | \$ |
| 200 75 | Bright & Dull | ..... | ..... | 1.08 | ..... | ..... |
| 300 120 | Bright & Dull | ..... | ..... | .98 | ..... | ..... |
| 450 100 | Bright & Dull | ..... | ..... | .92 | ..... | ..... |
| 490 120 | Bright & Dull | ..... | ..... | .98 | ..... | ..... |
| 900 350 | Dull | ..... | ..... | 1.03 | ..... | ..... |
| 920 120 | Bright & Dull | ..... | ..... | 1.03 | ..... | ..... |

Colorspun Yarns

| Denier | Type | Cones/Tubes Beams/Spools |
|--------|--------------------------|-----------------------------|
| 75 | Regular Strength | \$1.71 |
| 100 | Regular Strength | 1.35 |
| 150 | Regular Strength | 1.17 |
| 200 | Regular Strength | 1.14 |
| 300 | Regular Strength | 1.09 |
| 450 | Regular Strength | 1.05 |
| 600 | Regular Strength | 1.05 |
| 900 | Regular Strength | 1.05 |
| 300 | High Strength | 1.11 |
| 450 | High Strength | 1.06 |
| 900 | High Strength | 1.06 |
| 300 | Regular Strength 5-Turns | 1.19 |

Avicron Yarns

| Denier | Filament | Cones/Tubes Beams/Spools |
|--------|-------------|-----------------------------|
| 1800 | 100-200 | Singles & 2 Ply \$1.68 |
| 2700 | 150-300-980 | Singles & 2 Ply .65 |

Viscose Filament Yarns

The following material deposit charges are required:

| | |
|-------------------------------------|---------------|
| Metal Section Beams | \$170.00 each |
| Metal Section Beam Racks | 75.00 each |
| Metal Tricot Spools—14" flange | 30.00 each |
| 21" flange | 60.00 each |
| 32" flange | 150.00 each |
| Metal Tricot Spool Racks—14" flange | 135.00 each |
| 21" flange | 100.00 each |
| 32" flange | 75.00 each |
| Wooden Tricot Spool Crates | 20.00 each |
| Cloth Cake Covers | .05 each |

Same to be credited upon return in good condition—freight collect.

Celanese Corp. of America

Current Prices

Effective June 24

Viscose Rayon Filament Yarn Prices—Bright and Dull

| Denier/Fil/ Twist | Beams | Cones | Cakes |
|-------------------|-------|---------|-------|
| 75/30/3 | ..... | 1.10 | .98 |
| 100/40/2Z | .97 | ..... | ..... |
| 100/40/3 | ..... | .96 | .88 |
| 100/40/5 | ..... | 1.02 | ..... |
| 100/60/2Z | NS | .96 | ..... |
| 100/60/3 | ..... | .98 | .90 |
| 125/40/2Z | .93 | ..... | ..... |
| 125/40/3 | ..... | .94 | .85 |
| 150/40/0 | NS | .74 1/2 | ..... |
| 150/40/2Z | .81 | ..... | ..... |
| 150/40/3 | ..... | .79 1/2 | .76 |
| 150/40/5 | ..... | .90 | .86 |
| 150/40/8 | ..... | .95 | .91 |
| 150/90/0 | NS | .77 1/2 | ..... |
| 250/60/0 | NS | .74 | ..... |
| 250/60/3 | ..... | .80 | .77 |
| 300/50/0 | NS | .70 | ..... |
| 300/50/2Z | .72 | ..... | ..... |
| 300/50/3 | ..... | .70 1/2 | .69 |
| 450/120/0 | NS | .67 | ..... |

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U. S. A.

Prices subject to change without notice.

All previous prices withdrawn.

Prices on unlabeled items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

Effective with orders June 24, 1959

Bright and Dull

| Den. | Fil. | Turns/ Inch Up to | Type | Beams | Cones (A) Tubes | Cakes |
|------|------|-------------------------|-------------------|-------|--------------------|--------|
| 40 | 20 | 3 | Textile "Cordura" | ..... | \$1.97 | \$1.92 |
| 50 | 20 | 3 | ..... | ..... | 1.70 | ..... |
| 50 | 20 | 3 | Textile "Cordura" | ..... | 1.72 | 1.67 |
| 50 | 35 | 3 | Textile "Cordura" | ..... | 1.77 | ..... |
| 75 | 10 | 3 | Bright | ..... | 1.02 | 1.02 |
| 75 | 30 | 3 | ..... | ..... | 1.14 | 1.14 |
| 100 | 15 | 3 | Bright | ..... | .98 | .90 |
| 100 | 40 | 3 | Bright | ..... | .98 | .90 |
| 100 | 60 | 3 | Dull | ..... | 1.00 | .92 |
| 125 | 50 | 3 | ..... | ..... | .96 | .87 |
| 150 | 40 | 3 | ..... | ..... | .82 | .82 |
| 150 | 60 | 3 | Bright | ..... | .82 | .78 |
| 150 | 60 | 3 | Textile "Cordura" | ..... | .875 | .845 |
| 150 | 90 | 3 | Dull | ..... | .83 | ..... |
| 150 | 100 | 3 | Dull | ..... | .83 | ..... |
| 300 | 50 | 2.5 | ..... | .73 | .73 | .71 |
| 300 | 120 | 3 | Textile "Cordura" | .74 | .74 | .72 |
| 450 | 72 | 3 | ..... | .71 | .69 | .67 |
| 600 | 96 | 3 | Bright | .71 | .69 | .67 |
| 600 | 240 | 3 | Textile "Cordura" | .72 | .70 | ..... |
| 800 | 50 | 3 | Bright | .71 | .69 | .67 |
| 900 | 144 | 3 | Bright | .71 | .69 | .67 |
| 1165 | 480 | 3 | Textile "Cordura" | .72 | .70 | .68 |
| 1800 | 100 | 3 | Bright | ..... | .69 | ..... |
| 2700 | 150 | 3 | Bright | .71 | .69 | ..... |

Thick and Thin

| | | | | | | |
|------|-----|---|------------|-------|------|-------|
| 100 | 40 | 3 | #7 Bright | ..... | 1.42 | ..... |
| 150 | 90 | 3 | #7 Bright | ..... | 1.08 | ..... |
| 200 | 90 | 3 | #7 Bright | ..... | 1.08 | ..... |
| 450 | 100 | 3 | #7 Bright | ..... | .92 | ..... |
| 1100 | 240 | 3 | #60 Bright | ..... | 1.03 | ..... |
| 2200 | 480 | 3 | #60 Bright | ..... | .98 | ..... |

Monofils

| | | | | | | |
|-----|---|---|--------|-------|------|-------|
| 150 | 1 | 3 | Bright | 1.35 | 1.35 | ..... |
| 300 | 1 | 3 | Bright | 1.15 | 1.10 | ..... |
| 600 | 1 | 3 | Bright | ..... | 1.00 | ..... |

Plush

| | | | | | | |
|-----|----|---|------|-----|-----|-------|
| 300 | 30 | 3 | Dull | .85 | .81 | |
|-----|----|---|------|-----|-----|-------|

(A) 2¢/lb. additional for cones less than 3¢.

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

* "CORDURA" and "SUPER CORDURA" are Du Pont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corp.

Effective June 29, 1959

Continuous Process Textile Yarns

| Denier | Fila- ment | Turns per In. | Type | Beams | 2.8# Cones | 4.4# Cones and Tubes |
|--------|---------------|------------------|------------------------|-------|---------------|-------------------------------|
| 150 | 40 | 2.5"S" | Bright | .82 | .82 | ..... |
| 200 | 20 | 2.5"S" | Bright | .81 | .81 | ..... |
| 300 | 44 | 2.5"S" | Bright | .73 | .73 | ..... |
| 450 | 60 | 2.0"S" | Bright | .69 | ..... | .69 |
| 600 | 90 | 1.5"S" | Bright | .69 | ..... | .69 |
| 900 | 50 | 2.0"S" | Bright | .69 | ..... | .69 |
| 900 | 150 | 2.0"S" | Bright | .69 | ..... | .69 |
| 1100 | 480 | 2.0"S" | Bright extra strong | .66 | ..... | .66 |

Lustre #4 is semi-dull.

Prices are subject to change without notice.

Strawn Monofilament

| Denier | Fila- ment | Turns per In. | Type | 4.4# Cones | Spools and Tubes |
|--------|---------------|------------------|-----------------|---------------|---------------------|
| 450 | 1 | 0 | Bright and Dull | 1.00 | 1.05 |
| 450 | 1 | 2 | Bright and Dull | 1.00 | 1.05 |
| 1250 | 1 | 0 | Bright and Dull | 1.00 | 1.05 |
| 1250 | 1 | 2 | Bright and Dull | 1.00 | 1.05 |

Terms: Net 30 days f.o.b. point of shipment; title to pass to buyer on delivery of goods to carrier. Domestic transportation charges prepaid with transportation allowed at lowest published rate to all points in continental United States except Alaska.

Prices are subject to change without notice.

North American Rayon Corp.

Current Prices

Prices Effective July 3, 1959

| Denier/Filament | Twist | Knitting* Cones | No Twist Knitting Cones | Weaving Cones, Velvet Cones, Beams, Untreated Tubes** | Cakes |
|----------------------------------|-------|--------------------|-------------------------------|--|-------|
| Normal Strength Yarns — NARCO | ..... | ..... | ..... | ..... | ..... |
| 75/30 | 3.5 | ..... | ..... | 1.14 | 1.02 |
| 75/30 | 7 | ..... | ..... | 1.27 | ..... |
| 75/30 | 12 | ..... | ..... | 1.35 | ..... |
| 75/30 | 15 | ..... | ..... | 1.37 | ..... |
| 75/30 | 20 | ..... | ..... | 1.40 | ..... |

Dr. Harry H. Weinstock, Jr. has been named assistant manager of research at Allied Chemical Corp.'s central research laboratory at Morristown, N. J. In the company's Solvay Process Div., **M. James Campbell** has been appointed assistant to the vice president and in the National Aniline Div., **Edwin M. Williams, Jr.** has been appointed sales representative for the Greensboro, N. C. area.

Allied also appointed **Robert B. Lautner**, **Robert E. James**, and **Edward J. Walsh**, managers of the Syracuse, Moundsville and Baltimore plants respectively.



C. P. Bertland

Donald C. Issing has been named manager of advertising and promotion for the textile chemicals department of American Cyanamid Co. In the company's Fibers Division, **Charles P. Bertland** has been appointed assistant general manager and **Maurice Levin** assumes the newly-created post of designer in style and fabric development.

Dr. W. Paul Moeller has joined AviSun Corp. as manager of special projects.

Louis P. Batson, Jr. has been elected president of Batson Manufacturing Co., Inc., succeeding **John P. Batson** who died recently of a heart attack.



E. C. Lanno

Edward C. Lanno has been appointed director of manufacturing services and **Royden Walters**, executive vice president of Saco-Lowell Shops. **Harry K. Smyth** who had taken an indefinite leave of absence because of ill health has returned to active duty with the company.

Dr. William Sheehan has joined the staff of Southern Research Institute as head of the textile section.

NOVEMBER, 1959

for
Unparalleled
Beauty
of
Color

... Globe



package-dyed

SYNTHETIC yarns ...

Your creations deserve the color brilliance and permanence that Globe package-dyed yarns can provide. Let Globe provide that "seasons ahead" look.

Globe does package dyeing on tubes, skein and warp dyeing and bleaching, warp mercerizing and sizing.

Yarns we process include cotton, worsted, linen, blend and novelty yarns, and all synthetics—including Creslan, Orlon, Arnel and Zefran.

1865

1959



4500 WORTH STREET

PHILADELPHIA 24, PA.

JEfferson 5-3301

| | | | | |
|-----------|-----|------|------|-----|
| 100/40/60 | 3.5 | | .96 | .90 |
| 100/40 | 12 | | 1.22 | |
| 125/25/60 | 3 | | .96 | .87 |
| 150/42 | 0 | .74% | | |
| 150/42/60 | 3 | .80% | .82 | .78 |
| 300/75 | 0 | | | |
| 300/75 | 3 | .73 | .73 | .71 |
| 900/46 | 2.5 | .69 | .69 | |
| 1800/92 | 2.5 | .69 | .69 | |

* Oiled Cones \$.01 per pound extra for Graded Yarns only.
 ** 1 lb. Tubes \$.02 per pound extra for Graded Yarns only.
 Terms: Net 30 days, F.O.B. shipping point, minimum freight allowed to consignee's nearest freight station east of the Mississippi River. To points west of the Mississippi River minimum freight to Memphis, Tennessee allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold F.O.B. delivery point.
 Prices subject to change without notice.

TRIACETATE

Celanese Corp. of America

Current Prices Arnel Yarn Prices
 Bright & Dull

Effective August 19, 1958

| Denier and Filaments | Cones | Beams | Thick and Thin Cones |
|----------------------|---------|--------|----------------------|
| 55/WKZ/15 | \$ | \$1.16 | \$ |
| 55/2Z/15 | 1.32 | 1.33 | |
| 55/WKZ/20 | | 1.16 | |
| 75/2Z/20 | 1.21 | 1.22 | |
| 100/2Z/26 | 1.14 | | |
| 150/2Z/40 | .95 | .96 | |
| 200/2Z/40 | | | |
| 200/2Z/52 | .92 | .93 | 1.25 |
| 300/2Z/80 | .87 | .88 | 1.23 |
| 450/2Z/120 | .86 | .87 | |
| 600/2Z/160 | .85 | .86 | 1.21 |

3 to 5 Turns on Cones or Beams—\$.02 Additional
 Premium for Black Arnel—\$.25 Per Pound
 Premium for Navy Arnel—\$.37 Per Pound
 Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A.
 Prices subject to change without notice.
 All previous prices withdrawn.
 Note: Prices on unlisted items can be obtained upon request.
 Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

CELLULOSIC HIGH TENACITY YARN and FABRIC

American Enka Corp.

Effective December 19, 1958

Tempra (High Tenacity)

| Denier | Elongation | Beams & Cones |
|----------|------------|---------------|
| 1100/480 | Low | .60 |
| 1230/480 | High | .60 |
| 1650/720 | Low | .53 |
| 1820/720 | High | .53 |
| 2200/960 | High & Low | .52 |

* 1100/720
 * 1650/1100
 2200/1440
 Terms: Net 30 days, f.o.b. Enka, North Carolina, or Lowland, Tennessee; minimum freight allowed to first destination east of the Mississippi River.
 * Tyrex certified viscose yarn.

American Viscose Corp.

Effective September 21, 1959

Tyrex*

Tyrex* Certified Viscose Tire Yarn

| Denier | Filament | Twist | Beams | Cones |
|--------|----------|-------|-------|-------|
| 1100 | 980 | 0 | .62 | .62 |
| 1100 | 980 | Z | .62 | |
| 1650 | 980 | 0 | .55 | .55 |
| 1650 | 980 | Z | .55 | |

Tire Fabric Made with Tyrex* Certified Viscose
 Tire Yarn and Cord

| Denier | Filament | Carcass | Top Ply | Breaker |
|--------|----------|---------|---------|---------|
| 1100 | 980/2 | .74 | .74 | |
| 1650 | 980/2 | .64 | .65 | .675 |

Factor determined by dividing total ends by picks.
 * Tyrex is a collective trade-mark of Tyrex Inc. for Viscose Tire Yarn and Cord.

Rayon Tire Yarn
 Yarn

| Denier | Filament | Twist | High Strength | Tire Yarn | Super "Rayflex" |
|--------|----------|-------|---------------|-----------|-----------------|
| 1100 | 490 | Z | .... | .60 | |
| 1100 | 980 | 0-Z | .... | .... | .62 |
| 1150 | 490 | Z | .60 | .... | .... |
| 1230 | 490 | Z | .60 | .... | .... |
| 1650 | 980 | Z | .53 | .53 | .54 |
| 1650 | 980 | 0 | .... | .53 | .55 |
| 1650 | 1500 | Z | .... | .... | .55 |
| 1650 | 1500 | 0 | .... | .... | .55 |
| 1875 | 980 | Z | .53 | .... | .54 |
| 2200 | 980 | 0 | .... | .52 | .54 |
| 3300 | 1980 | 0 | .... | .... | .54 |

High Strength available on cones — tubes — beams.
 Tire Yarn and Super "Rayflex"
 0 twist — Available on cones, beams or 10# tubes.
 Z twist — Available on beams.

Sewing Thread

| | | | |
|--------------------------|-----|-------|-----|
| 1100/980 Super "Rayflex" | 0-Z | Cones | .63 |
| 1780/980 Super "Rayflex" | 0-Z | Cones | .58 |

Also available in colors at .07 premium.
 All yarns sold "Not Guaranteed for Dyeing".

Rayon Tire Fabric

| | | | | | | |
|------|------|-------------------|---------|----------|---------|---------|
| 1100 | 980 | Super-120-220-320 | Factor* | Open-525 | 300-490 | 115-275 |
| 1650 | 980 | Super-110-210-310 | | .63 | .64 | .665 |
| 1650 | 1500 | Super-120-220-320 | | .64 | .65 | .675 |

* Factor determined by dividing total ends by picks.
 Cord on cones in regular Tire Yarn twists same as fabric prices.
 Other twist combinations — prices quoted on request.
 When supplied, yarns and cords in special packages take premiums indicated.

| | |
|--|--------------|
| 10.5 oz. Wardwell tubes | .09 |
| 1.5 lb. Regular Braider tubes | .05 |
| 3.5 lb. Tubes | .035 |
| Adhesive Dipped yarn | .05 |
| The following deposit charges are made on invoices. | |
| Beams | \$55.00 each |
| Crates (Metal) | 75.00 each |
| Fabric Shell Rolls | 3.50 each |
| Same to be credited upon return in good condition — freight collect. | |

Rayon Tire Yarn and Fabric

Terms: Net 30 days. Seller to select and to pay transportation charges of common and contract carrier except when shipment moves West of Mississippi River in which event the actual cost of transportation to the Mississippi River crossing based on the lowest published freight rate, shall be allowed. Title to pass when merchandise is delivered to consignee. Transportation allowance based on lowest published volume rate shall be granted if merchandise is transported from shipping point in vehicle owned or leased and operated by buyer and title to pass when merchandise is delivered to same.
 Prices subject to change without notice.

Celanese Corporation of America

Effective December 27, 1955

Fortisan Yarn Prices

| Denier | Packages | Natural | Black |
|-------------|-------------|------------|------------|
| 30/2.5/40 | 2 lb. Cones | \$3.00 lb. | \$3.35 lb. |
| 60/2.5/80 | 4 " | 2.40 " | 2.75 " |
| 90/2.5/120 | 4 " | 2.25 " | 2.60 " |
| 120/2.5/160 | 4 " | 2.05 " | 2.40 " |
| 150/2.5/180 | 4 " | 1.95 " | 2.30 " |
| 270/2.5/360 | 4 " | 1.85 " | 2.20 " |
| 300/2.5/360 | 4 " | 1.85 " | 2.20 " |

60/2.5/80 Olive Green—Spun Dyed—OG106 4 lb. Cones \$3.50 lb.
 Terms: Net 30 days. Shipments prepaid to any destination in U.S.A.
 Prices subject to change without notice.
 All previous prices withdrawn.
 Prices on unlisted items can be obtained upon request.
 Orders are subject to conditions of sale appearing on our acknowledgments of orders.

Fortisan-36 Rayon Yarn Bright

| Denier and Filament | Twist | 4# cones | 8# cones | Tubes | Beams |
|---------------------|---------|----------|----------|--------|--------|
| 270/280 | 0.8Z | \$2.30 | | | |
| 300/280 | 0.8Z | \$2.05 | | | |
| 300/280 | 3Z | \$2.20 | | | |
| 400/400 | 0.8Z | \$1.75 | | | \$1.70 |
| 400/400 | 0 | | | \$1.75 | |
| 800/800 | 0.8Z | \$1.25 | \$1.25 | | \$1.20 |
| 800/800 | 3Z | \$1.40 | | | |
| 800/800 | 0 | | | \$1.25 | |
| 1600/1600 | 0.8Z | \$1.15 | \$1.15 | | \$1.10 |
| 1600/1600 | 2 1/2 Z | \$1.30 | | | |
| 1600/1600 | 0 | | | \$1.15 | |

Terms: Net 30 days. Shipments prepaid to any destination in U.S.A.
 Prices subject to change without notice.
 All previous prices withdrawn.
 Prices on unlisted items can be obtained upon request.
 Orders are subject to conditions of sale appearing on our acknowledgments of orders.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept. Current Prices

Effective September 21, 1959

"Super Cordura"

| Den Fil | Turns/in | All Packages |
|-----------|----------|--------------|
| 1100-720 | 2 | \$1.62 |
| 1200-720 | 2 | .62 |
| 1530-960 | 2 | .59 |
| 1600-960 | 2 | .55 |
| 1650-1100 | 2 | .55 |
| 1800-1100 | 2 | .55 |
| 2200-1440 | 2 | .54 |
| 2400-1440 | 2 | .54 |

Terms: Net 30 Days.
 Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.
 * "CORDURA" and "SUPER CORDURA" are DuPont's registered trade-marks for its high tenacity rayon yarn.

Industrial Rayon Corporation

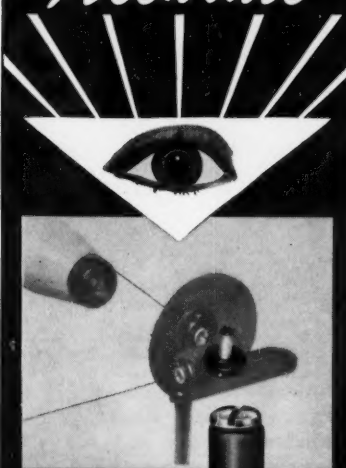
Effective September 21, 1959

Unbleached Bright High Tenacity Yarns

Single End Beams and Cones—Type 100

| Denier | Filament | Turns per Inch | Beams | Cones |
|--------|----------|----------------|-------|-------|
| 1100 | 480 | 2.0 "Z" | .60 | .60 |
| 1150 | 480 | 2.0 "Z" | .60 | .60 |
| 1650 | 720 | 2.0 "Z" | .53 | .53 |
| 1725 | 720 | 2.0 "Z" | .53 | .53 |
| 2200 | 1000 | 2.0 "Z" | .52 | .52 |
| 3300 | 1440 | 2.0 "Z" | .52 | .52 |
| 4400 | 2000 | 2.0 "Z" | .52 | .52 |

Accurate



Yarn is under perfect tension from a central location. One dial adjustment changes tension, uniformly at all tension stations.

The Lindly Electrotense: Simple, compact, inexpensive. Accurately controls yarn tension from zero to about 20 grams.

DIAL CONTROL of YARN TENSION

at Any Number of Stations!

The Lindly ELECTROTENSE is the new, inexpensive, electro-mechanical way to control yarn tension from almost zero to about 20 grams. A turn of a single, centrally located dial applies desired tension evenly and simultaneously at all tension stations.

What are the advantages?

The Lindly ELECTROTENSE permits easy, instant change of yarn tension. It results in more uniform beams, more yarn per warp beam, less maintenance and machine down-time, fewer broken ends and better cloth.

GET THE FULL FACTS ON THIS NEW TIME-**SAVING, QUALITY-IMPROVING, COST-CUTTING** LINDLY SYSTEM. WRITE, WIRE OR PHONE TODAY!

It Pays to Know  the Lindly Count

LINDLY & COMPANY, INC.
248 HERRICKS ROAD
MINEOLA, NEW YORK

Dr. Robert A. Gregg has been appointed research manager of the textile division of United States Rubber Co.

Michael Kopeck has been appointed vice president in charge of the Luray Division of Schwarzenbach Huber Co.



Don Schaaf

Don Schaaf has been appointed manager of the textile chemicals department of Nopco Chemical Co.'s Industrial Division, succeeding **Walter E. Brewer** who has been named sales manager of Jacques Wolf & Co., a subsidiary of Nopco.

Cameron A. Baker has joined Better Fabrics Testing Bureau, Inc., to serve as director of research and development. Baker was formerly manager of the textile research department of United States Testing Co. He is president of the American Association for Textile Technology, Inc.

Roy D. Faigenbaum vice president in charge of sales for Fidelity Machine Co., Inc. has resigned from his position after 20 years with the company.

David F. Driscoll, manager of the Sandoz, Inc., Los Angeles office retired October 1st.

Dr. G. Preston Hoff, manager of the planning div., Du Pont Co.'s Textile Fibers Department, retired the end of July, after 30 years with the company.

Deaths

Ormand Wesley Clark, 61 textile chemist at American Cyanamid Co.'s Bound Brook plant.

Charles L. Coble, production manager of Apex Chemical Co., Inc. He had been with the company for over 40 years.

Edwin Stein, 64 chairman of the board of Stein Hall & Co., Inc.

William E. H. Bell, 73 president of Klauder-Weldon Giles Machine Co.

William A. Kerstetter, 66 vice president and director of Sanbury Textile Mills.

Vivian C. McCollom, 57 president, Allentown Converting Co. Mr. McCollom died of a heart attack.

3 COST-CUTTING IDEAS



for '59

Finding a way to increase production and reduce waste can often result in substantial savings. Take fabric guiders, for instance . . .

MECHO AIR GUIDERS



Here are three ideas that can pay off for you for years to come with these ingenious cost-cutters.



ELIMINATE FABRIC SPOILAGE

Mecho's gentle action and exclusive features eliminate double edges, spattering and other damage to fabric.



SPEED UP FABRIC PROCESSING

by adjusting Mecho's selvage finger tension to handle the lightest fabric or #8 duck at 1 to 400 ypm while in operation. It'll stay accurate within 1/8 inch.



REDUCES REPAIRS AND DOWNTIME

with the simplicity of Mecho's precision design . . . no weights or linkages . . . nothing to get out of order.

If you aren't already enjoying these and other cost-cutting advantages of Mecho Air Guide, why not check up now?

Send today for your free copy of the Mecho Air Guide Catalog.



THE Mecho GUIDER SPECIALTY COMPANY

423 W. Rock Ave., New Haven 15, Conn.
SOUTHERN REP.

McSpadden and Scantland
P. O. Box 3635
Charlotte 3, N. C.

EXPORT & NEW ENG. REP.
Standard Mill Supply Company
P. O. Box 1534
Providence 1, R. I.

Tyrex Tyrex Certified Viscose Tire Yarn

| Denier | Filament | Twist | Beams | Cones |
|--------|----------|-------|-------|-------|
| 1100 | 720 | Z | .62 | .62 |
| 1650 | 1100 | Z | .55 | .55 |

Type 400 prices are 4¢ more.

Terms: Net 30 days f.o.b. point of shipment, title to pass to buyer on delivery of goods to carrier. Domestic transportation charges allowed at lowest published rate to all points in continental United States except Alaska.

PRICES ARE SUBJECT TO CHANGE WITHOUT NOTICE.

North American Rayon Corporation

| Super Super High Strength Continuous Yarn Type 710 | Cones | Beams |
|--|-------|-------|
| 1100/720 | 1.6Z | .62 |
| 1650/720 | 2.0Z | .55 |

Tire Cord Fabrics

| Super Super High Strength Type 710 | Rolls |
|------------------------------------|-------|
| 1100/720 | .74 |
| 1650/720 | .64 |

Terms: Net 30 days, f.o.b. shipping point. Minimum freight allowed to consignee's nearest freight station East of the Mississippi River. To points West of the Mississippi River minimum freight to Memphis, Tenn. allowed. Goods after shipment shall be at buyer's risk. Merchandise transported in seller's own trucks or those of its affiliates is sold f.o.b. delivery point.

CELLULOSIC STAPLE & TOW ACETATE

Celanese Corp. of America

Current Prices

Effective March 2, 1959

Staple

(Most Deniers Available in Bright or Dull Luster)

| Celanese Acetate Staple | |
|---|---------------|
| 3, 5.5 & 8 Denier | |
| (Regular Crimp, Type HC, Type D) | \$.36 |
| 2, 12 & 17 Denier | |
| (Regular Crimp, Type HC, Type D) | .37 |
| 35 Denier | .38 |
| 50 Denier | .40 |
| Type F—5.5 & 8 Denier | .35 |
| Type F—12 & 17 Denier | .36 |
| Type K—(Available under Celanese License Agreement) | .39 |
| ¾" to 1" length (All Deniers) | .03 (Premium) |
| 35 Denier Flat Filament Acetate | .40 |
| Non-Textile Acetate Fibers | .29* |

Tow (Celatow)

| | |
|-------------------|-------|
| 3, 5.5 & 8 Denier | \$.37 |
| 2, 12 & 17 Denier | .38 |
| 35 Denier | .40 |
| 50 Denier | .42 |

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. east of Mississippi River. Transportation prepaid to any U.S.A. destination west of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

* No transportation allowed (F.O.B. shipping point.)

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our acknowledgments of orders.

CROSS-LINKED

Courtaulds (Alabama) Inc.

Effective April 14, 1959

Corval™

| | |
|--|---------------|
| Man-made, cross-linked, cellulosic staple, Bright and Dull, 1½, 3 and 5½ denier | \$.40 per lb. |
|--|---------------|

Topel®

| | |
|--|---------------|
| Man-made, cross-linked, cellulosic staple, Bright and Dull, 1½, 3 and 5½ denier | \$.37 per lb. |
|--|---------------|

Terms: Net 30 days f.o.b. LeMoyné, Alabama; Minimum transportation allowed to points in U.S.A. east of Mississippi River.

RAYON

American Viscose Corp.

Current Prices

Rayon Staple

| Regular | Bright and Dull |
|--------------------------|-----------------|
| "Viscose 22" | \$.33 |
| Extra Strength | .33 |
| 1.0 Denier | .36 |
| "Avisco XL" | |
| 1.0 Denier | .42 |
| 1.5 & 3.0 Deniers | .39 |
| "Avisco Crimped" | |
| 1.25 Denier | .36 |
| 3.0 & 5.5 Deniers | .34 |
| 8.0 & 15.0 Deniers | .35 |
| "Avisco Super L" | |
| 8.0, 15.0 & 22.0 Deniers | .36 |

COLORSPUN STAPLE

| Color | Code | Price |
|-------------|------|-------|
| Sea Foam | 517 | 47¢ |
| Spun Gold | 614 | 47¢ |
| Cascade | 419 | 42¢ |
| Silver Gray | 208 | 42¢ |
| Bridal Rose | 710 | 42¢ |
| Pale Pink | 708 | 42¢ |

| | | |
|---------------|-----|-----|
| Rosewood | 835 | 47¢ |
| Bisque | 803 | 42¢ |
| Champagne | 833 | 42¢ |
| Sandalwood | 802 | 42¢ |
| Apple Red | 700 | 58¢ |
| 3.0 Denier 2" | | |
| Mint Green | 505 | 47¢ |
| Pale Pink | 708 | 42¢ |
| Bisque | 803 | 42¢ |
| Sandalwood | 802 | 42¢ |
| Nutmeg | 801 | 47¢ |
| Gold | 603 | 47¢ |
| Turquoise | 408 | 42¢ |
| Wine | 304 | 59¢ |
| Gray | 208 | 42¢ |
| Spice Brown | 800 | 47¢ |

Rayon Tow

| Grouped Continuous Filaments (200,000 Total Denier) | |
|---|-----|
| 1.5, 3.0 & 5.5 Denier Per Filament | .35 |
| 9.0 Denier Per Filament | .37 |

Terms: Net 30 days.

American Enka Corp.

Current Prices Effective 7/1/59

Rayon Staple

| Regular | Brt. | Dull |
|------------------|-------|-------|
| 1.5 and 3 denier | \$.33 | \$.33 |
| Crimped | | |
| 6.5 denier | .34 | .... |
| 8 denier | .35 | .... |
| 15 denier | .35 | .35 |

Celanese Corp. of America

Current Prices

Effective May 1, 1959

Rayon Tow

| 1.5, 3, 5.5 D.P.F. | Bright & Dull |
|----------------------|---------------|
| Total denier 200,000 | .35 |
| 8 D.P.F. | .37 |

Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. East of Mississippi River. Transportation prepaid to any U.S.A. destination West of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.

All previous prices withdrawn.

Note: Prices on unlisted items can be obtained upon request.

Orders are subject to conditions of sale appearing on our Acknowledgments of Orders.

Courtaulds (Alabama) Inc.

Effective April 14, 1959

Rayon Staple

| 1½ and 3 denier | Bright | Dull |
|-----------------------------------|--------|-------|
| Available in 1½", 1-9/16" and 2". | \$.33 | \$.33 |
| Crimped Rayon Staple | | |
| 3 and 5½ denier | \$.34 | \$.34 |
| Available in 1-9/16" and 3". | | |
| 3 denier | | .34 |
| Available in 2". | | |

Coloray® Solution Dyed Rayon Staple

| Color | Price per lb. |
|-----------------|---------------|
| Black | 39¢ |
| Silver Grey | 41¢ |
| Mocha | 41¢ |
| Tan | 41¢ |
| Medium Brown | 41¢ |
| Aqua | 42¢ |
| Rose | 42¢ |
| Dawn Pink | 42¢ |
| Ecu | 42¢ |
| Dark Brown | 42¢ |
| Slate Grey | 45¢ |
| Sulphur | 46¢ |
| Nugget | 46¢ |
| Light Blue | 46¢ |
| Crystal Blue | 47¢ |
| Apple Green | 47¢ |
| Sage | 47¢ |
| Peacock Blue | 48¢ |
| Medium Blue | 50¢ |
| Indian Yellow | 51¢ |
| Dark Blue | 51¢ |
| Hunter Green | 51¢ |
| Turquoise | 52¢ |
| Malachite Green | 53¢ |
| Red | 58¢ |

In addition to the above, Black is also available in:

| | |
|----------------|------------|
| 1½ den. 1½" | 5½ den. 3" |
| 3 den. 1½" | 5½ den. 6" |
| 3 den. 1-9/16" | |

Terms: Net 30 days f.o.b. LeMoyné, Alabama; Minimum transportation allowed to points in U.S.A. east of Mississippi River.

The Hartford Fibres Co.

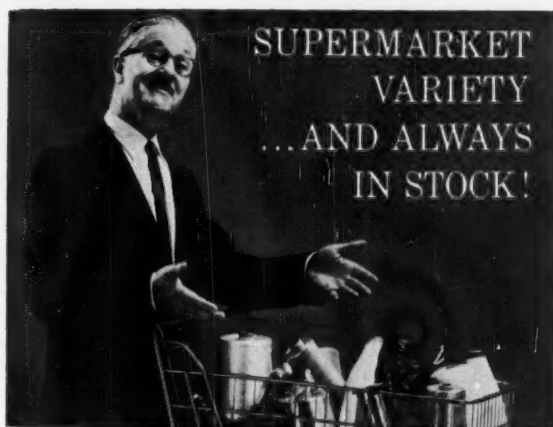
Div. Bigelow-Sanford Carpet Co., Inc

Rayon Staple

Effective November 3, 1958

| REGULAR | 1.5 denier Bright | 1 9/16", 2" |
|-----------------------|---------------------|-------------|
| VISCALON 66 (Crimped) | | .33 |
| | 8 denier 3" Bright | .35 |
| | 15 denier 3" Bright | .35 |
| | 15 denier 3" Dull | .35 |

"KOLORBON"—Solution Dyed Rayon Staple—3" and 6"



**SUPERMARKET
VARIETY
...AND ALWAYS
IN STOCK!**

Delivered immediately!

RAYON • NYLON • ACETATE YARNS

graded and inferiors—all put ups.

MALORA® METALLIC YARNS

supported and unsupported

THROWN YARNS

HELANCA® STRETCH YARNS

NYLON • DACRON



125 WEST 41st STREET, NEW YORK 36, Longacre 3-4200

STATEMENT OF THE OWNERSHIP, MANAGEMENT, AND CIRCULATION REQUIRED BY THE ACT OF CONGRESS OF AUGUST 24, 1912, AS AMENDED BY THE ACTS OF MARCH 3, 1933, AND JULY 2, 1946 (Title 39, United States Code, Section 233) OF MODERN TEXTILES MAGAZINE published Monthly at Manchester, New Hampshire for October, 1959.

1. The names and addresses of the publisher, editor, managing editor, and business managers are:
Publisher, Alfred H. McCollough, 303 Fifth Ave., New York 16, N. Y.
Editor, Jerome Campbell, 303 Fifth Ave., New York 16, N. Y.
Managing editor, H. George Janner, 303 Fifth Ave., New York 16, N. Y.
Business manager, H. J. Williams, 303 Fifth Ave., New York 16, N. Y.

2. The owner is: (If owned by a corporation, its name and address must be stated and also immediately thereunder the names and addresses of stockholders owning or holding 1 percent or more of total amount of stock. If not owned by a corporation, the names and addresses of the individual owners must be given. If owned by a partnership or other unincorporated firm, its name and address, as well as that of each individual member, must be given.)
Rayon Publishing Corp., 303 Fifth Avenue, New York 16, N. Y.
A. H. McCollough, 303 Fifth Avenue, New York 16, N. Y.
Harries A. Mumma, 61 Broadway, New York 6, N. Y.

3. The known bondholders, mortgagees, and other security holders owning or holding 1 percent or more of total amount of bonds, mortgages, or other securities are: (If there are none, so state.)
NONE.

4. Paragraphs 2 and 3 include, in cases where the stockholder or security holder appears upon the books of the company as trustee or in any other fiduciary relation, the name of the person or corporation for whom such trustee is acting; also the statements in the two paragraphs show the affiant's full knowledge and belief as to the circumstances and conditions under which stockholders and security holders who do not appear upon the books of the company as trustees, hold stock and securities in a capacity other than that of a bona fide owner.

5. The average number of copies of each issue of this publication sold or distributed, through the mails or otherwise, to paid subscribers during the 12 months preceding the date shown above was: (This information is required from daily, weekly, semiweekly, and triweekly newspapers only.)

A. H. MCCOLLOUGH, Publisher

Sworn to and subscribed before me this 25th day of September, 1959.

DORIS P. RATTENBURY
Notary Public, State of New York
No. 24-3211700
Qualified in Kings County
Certificate filed in New York County
Commission Expires March 30, 1961

NOVEMBER, 1959

To Sell Japanese Rugs

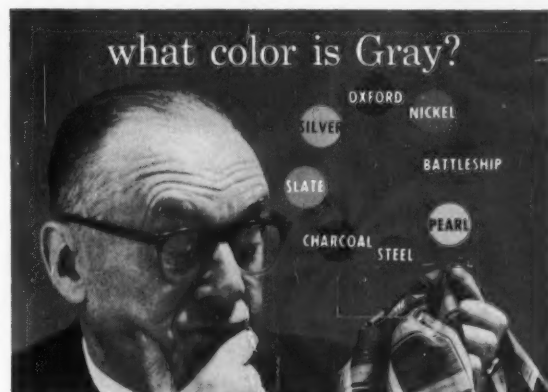
C. H. Masland & Sons has acquired the business of Horizon Carpets, Inc., an American sales corporation, and will operate it as wholly-owned subsidiary. Horizon distributes in the U. S. floor coverings manufactured in Japan for Mitsui & Co. of Japan and New York.

F. E. Masland, Jr., president, stated that wilton carpet imports currently represent 20% of total wilton domestic sales, and that his company feels that its arrangement with Mitsui will prove beneficial not only to the immediate parties concerned but to the American carpet industry as well.

Du Pont Appointments

James O. Graves has been appointed assistant to Lester S. Sinness assistant general manager of Du Pont's Textile Fibers Department.

Further appointments in the company include: Donald F. Holmes, assistant director of the merchandising division; Charles E. Mears, manager of men's wear merchandising; Robert H. Stafford, manager of industrial merchandising; T. Nash Broaddus, manager of home furnishings merchandising, succeeding Angelo J. Smith, Jr. recently appointed manager of advertising and promotion; Otto J. Lutness, manager of new products, merchandising division; James S. Rumsey, manager of sales programs for Dacron; Linton G. Ray, manager of women's wear merchandising; Gerald Alexander, assistant merchandising manager for women's wear; John H. Hildreth, head, accounting and business analysis div.; William W. Hess, assistant to the director of merchandising.



At ATLANTIC color specified is color delivered ...
assured by superior techniques and
facilities acknowledged in the industry.

YARN DYEING

Rayon • Nylon • Acetate • Stretch Yarns
Cakes • Packages • Skeins

Custom-matched colors. Large dye batches.
Any degree of color fastness. Packaged as desired.

PROMPT DELIVERY

Atlantic
Rayon Corporation

125 WEST 41st ST., NEW YORK 36, LONGACRE 3-4200
PLANT: 86 CRARY ST., PROVIDENCE, R. I.

| | 8 Denier Bright | 15 Denier Dull | 15 Denier Bright |
|----------------|--------------------|-------------------|---------------------|
| Cloud Grey | .46 | .46 | |
| Sandalwood | .46 | .46 | |
| Nutria | .46 | .46 | |
| Sea Green | .46 | .46 | |
| Mint Green | .46 | .46 | |
| Champagne | .46 | .46 | |
| Midnight Black | .46 | | .46 |
| Gold | .49 | .49 | |
| Turquoise | .46 | .46 | |
| Melon | .46 | .46 | |
| Capri Blue | .46 | .46 | |
| Charcoal Grey | .46 | .46 | |
| Coco | .47 | .47 | |
| Sable | .48 | | .48 |
| Tangerine | .66 | | .66 |
| Chinese Red | .66 | | .66 |
| Larkspur Blue | .46 | .46 | |
| Royal Blue | .66 | | .66 |
| Lemon Peel | .55 | .55 | |
| Kelly Green | .55 | .55 | |
| Bitter Green | .66 | | .66 |

Terms: Net 30 days. Prices are quoted f.o.b. shipping point, lowest cost of transportation allowed, or prepaid. To points West of the Mississippi, lowest cost of transportation allowed to the Mississippi River crossing.

North American Rayon Corporation

Current Prices

| Rayon Staple | | Bright |
|------------------------------|--|--------|
| Super High Tenacity | | |
| No. 1 (Unshrunk) | | |
| 1, 1.5 & 3 deniers | | .40 |
| No. 2 (Freshrunk) | | |
| 1, 1.5 & 3 deniers | | .40 |
| Rayon Tow | | |
| High Tenacity | | |
| 2200 denier, 1.0 and 1.5 D/F | | 57.5 |
| 4400 denier, 1.0 and 1.5 D/F | | 47.5 |

TRIACETATE

Celanese Corp. of America

Current Prices

Effective June 7, 1957

(Most Deniers Available in Bright or Dull Luster)

| Arnel Staple and Tow | | Bright & Dull |
|-------------------------|--|---------------|
| Arnel Triacetate Staple | | |
| 2.5 Individual Denier | | \$5.55 |
| 5.0 Individual Denier | | .55 |
| Arnel Triacetate Tow | | |
| 2.5 Individual Denier | | \$6.60 |
| 114,000 Total Denier | | |
| 5.0 Individual Denier | | .60 |
| 90,000 Total Denier or | | |
| 180,000 Total Denier | | |

Packaged on Ball Warps
Terms: Net 30 days. Transportation prepaid or allowed to any destination in U.S.A. east of Mississippi River. Transportation prepaid to any U.S.A. destination west of Mississippi River, but charge is made for the portion of transportation from river crossing nearest customer's location.

Prices subject to change without notice.
All previous prices withdrawn.
Note: Prices on unlisted items can be obtained upon request.
Orders are subject to conditions of sale appearing on our acknowledgments of orders.

NON CELLULOSIC YARN

Allied Chemical Corporation

Caprolan®

Effective August 17, 1959

| Denier | Fila- ment | Turn/ In. | Twist | Type** | Package | 1st Grade Price/Lb. |
|-------------------|---------------|--------------|-------|--------|---------------|------------------------|
| 200 | 16 | 1 1/2 | Z | B | Cone | \$1.49 |
| 840 | 136 | 1/2 | Z | HBT | Aluminum Tube | 1.06 |
| 840 | 136 | 1/2 | Z | HBT | Beams | 1.06 |
| 1050 | 56 | 1/2 | Z | HB | Aluminum Tube | 1.15 |
| 2106 | 112 | 1/2 | Z | HB | Aluminum Tube | 1.11 |
| Heavy Yarn | | | | | | |
| 2100 | 408 | 0 | O | HB | Paper Tube* | 1.06 |
| 2500 | 408 | 0 | O | HB | Paper Tube* | 1.06 |
| 3360 | 544 | 0 | O | HB | Paper Tube* | 1.05 |
| 4200 | 680 | 0 | O | HB | Paper Tube* | 1.05 |
| 4200 | 224 | 0 | O | HB | Paper Tube* | 1.10 |
| 5000 | 816 | 0 | O | HB | Paper Tube* | 1.05 |
| 5800 | 952 | 0 | O | HB | Paper Tube* | 1.05 |
| 7500 | 1224 | 0 | O | HB | Paper Tube* | 1.04 |
| 10000 | 1632 | 0 | O | HB | Paper Tube* | 1.04 |
| 15000 | 2448 | 0 | O | HB | Paper Tube* | 1.04 |

Terms—Net 30 days.
Prices subject to change without notice.
All prices quoted F.O.B. Shipping Point.
Following are invoiced as a separate item.
Bobbins—45 cents each.
Aluminum Tubes—40 cents each.
Beams—\$220.00 each.
Cradles for Beams—\$53.00.
* Paper Tubes non-returnable, no charge.
** Type is used to describe luster and tenacity.
Minimum transportation charges allowed and prepaid in continental United States, excluding Alaska.

B—Bright.
H—High Tenacity.
T—Heat Stabilized.

American Enka Corporation

Enka Nylon Yarn Prices

Effective August 19, 1958

| Den/Fil | Twist | Luster | Type | Tenacity | Pkg. | Net Wt. | Price/Pound |
|------------|-------|-----------|------|----------|------|------------|-------------|
| 15 monofil | 0.5Z | Semi-dull | 9506 | Normal | Pirn | 2 lb. | 5.25 5.00 |
| 15 monofil | 0.5Z | Semi-dull | 9506 | Normal | Beam | | 5.36 |
| 15 monofil | 0.5Z | Dull | 9514 | Normal | Pirn | 2 lb. | 5.30 5.05 |
| 15 monofil | 0.5Z | Dull | 9514 | Normal | Beam | | 5.41 |
| 15/2 | 0.5Z | Semi-dull | 9518 | Normal | Pirn | 1 lb. | 7.37 6.70 |
| 18/2 | 0.5Z | Semi-dull | | Normal | Pirn | 1 lb. | 4.95 4.50 |
| 20 monofil | 0.5Z | Semi-dull | 9534 | Normal | Pirn | 1 lb. | 5.55 5.05 |
| 20/2 | 0.5Z | Semi-dull | 9478 | Normal | Pirn | 1 lb. | 2.62 2.42 |
| 30/4 | 0.5Z | Semi-dull | | Normal | Pirn | 2 lb. | 2.36 2.21 |
| 30/6 | 0.5Z | Semi-dull | 9464 | Normal | Pirn | 2 lb. | 2.01 1.91 |
| 40/8 | 0.5Z | Semi-dull | 9558 | Normal | Pirn | 2 lb. | 2.11 |
| 40/8 | 0.5Z | Semi-dull | 9558 | Normal | Beam | | 2.06 1.96 |
| 40/10 | 0.5Z | Dull | 9564 | Normal | Pirn | 2 lb. | 2.16 |
| 40/10 | 0.5Z | Dull | 9564 | Normal | Beam | | 1.91 1.76 |
| 50/13 | 1.5Z | Semi-dull | 9562 | Normal | Pirn | 2 lb. | 1.71 1.66 |
| 70/32 | 0.5Z | Semi-dull | 9251 | Normal | Pirn | 2 lb. | 1.65 1.60 |
| 100/32 | 0.5Z | Semi-dull | 9253 | Normal | Pirn | 2 lb. | 1.49 1.44 |
| 200/16 | 0.6Z | Bright | 9826 | Normal | Beam | | 1.54 |
| 200/16 | 0.5Z | Bright | 9826 | Normal | Beam | | 1.49 1.44 |
| 200/34 | 0.6Z | Bright | 9832 | Normal | Beam | | 1.54 |
| 200/34 | 0.5Z | Bright | 9832 | Normal | Beam | | 1.49 1.39 |
| 260/16 | 0.6Z | Bright | 9197 | Normal | Cone | 4 lb. | 1.49 1.39 |
| 260/34 | 0.6Z | Bright | 9197 | Normal | Cone | 4 lb. | 1.39 1.29 |
| 520/32 | 0.6Z | Bright | 9546 | Normal | Cone | 4 lb. | 1.39 1.29 |

Pirns charged at \$.25 or \$.45 each, depending on type. Deposit refunded upon return of pirn in good condition. Cones are non-returnable. Beams and cradles are deposit carriers and remain property of American Enka Corporation.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination in the continental United States, in preparing transportation charges, the seller reserves the right to select the carrier used.

The Chemstrand Corp.

Current Prices Effective June 2, 1958

| Denier | Filament | Twist | Type* | Package | Standard Price/Lb. | Second Price/Lb. |
|--------|----------|-------|----------------|----------------|-----------------------|---------------------|
| 10 | 1 | O | SD | Bobbins | \$8.42 | \$7.81 |
| 15 | 1 | O | SD | Bobbins | 5.25 | 5.00 |
| 15 | 1 | O | SD | Spools | 5.36 | |
| 15 | 1 | O | D | Bobbins | 5.30 | 5.05 |
| 20 | 7 | Z | D | Spools | 5.41 | |
| 30 | 10 | Z | SD | Bobbins | 2.36 | 2.21 |
| 30 | 10 | Z | D | Bobbins | 2.41 | 2.21 |
| 30 | 10 | Z | HSD | Bobbins | 2.36 | 2.21 |
| 30 | 26 | Z | SD | Bobbins | 2.49 | 2.21 |
| 40 | 7 | Z | SD | Bobbins | 2.11 | 1.81 |
| 40 | 10 | Z | SD | Bobbins | 2.01 | 1.91 |
| 40 | 13 | O | SD | Draw Wind | 2.01 | 1.91 |
| 40 | 13 | Z | SD | Spools | 2.11 | |
| 40 | 13 | Z | D | Bobbins | 2.06 | 1.96 |
| 40 | 13 | Z | D | Spools | 2.16 | |
| 50 | 17 | Z | SD | Bobbins | 1.91 | 1.76 |
| 50 | 17 | Z | SD | Draw Wind | 1.91 | 1.76 |
| 70 | 34 | Z | SD | Bobbins | 1.71 | 1.66 |
| 70 | 34 | Z | SD | Draw Wind | 1.71 | 1.66 |
| 70 | 34 | Z | B | Spools | 1.81 | |
| 70 | 34 | Z | B | Bobbins | 1.71 | 1.66 |
| 70 | 34 | O | B | Draw Wind | 1.71 | 1.66 |
| 70 | 34 | Z | D | Bobbins | 1.76 | 1.66 |
| 70 | 34 | Z | D | Spools | 1.86 | |
| 70 | 34 | Z | HB | Bobbins | 1.76 | 1.66 |
| 80 | 26 | Z | SD | Bobbins | 1.71 | 1.60 |
| 100 | 34 | Z | SD | Bobbins | 1.65 | 1.60 |
| 100 | 34 | Z | SD | Spools | 1.75 | |
| 100 | 34 | Z | HB | Bobbins | 1.70 | 1.60 |
| 140 | 68 | Z | SD | Bobbins | 1.60 | 1.55 |
| 140 | 68 | Z | SD | Spools | 1.70 | |
| 140 | 68 | Z | B | Bobbins | 1.60 | 1.55 |
| 200 | 34 | Z | B | Bobbins | 1.49 | 1.44 |
| 200 | 34 | O | B | Draw Wind | 1.49 | 1.44 |
| 210 | 34 | O | HB | Bobbins | 1.49 | 1.44 |
| 210 | 34 | Z | HB | Draw Wind | 1.49 | 1.44 |
| 210 | 34 | Z | HB | Spools | 1.54 | |
| 210 | 34 | Z | HB | Beams | 1.54 | |
| 210 | 34 | Z | RHB | Bobbins | 1.59 | 1.54 |
| 260 | 17 | Z | HB | Bobbins | 1.49 | 1.39 |
| 260 | 17 | Z | HB | Spools | 1.54 | |
| 420 | 68 | Z | HB | Bobbins | 1.39 | 1.29 |
| 520 | 34 | Z | HB | Bobbins | 1.39 | 1.29 |
| 630 | 102 | Z | HB | Bobbins | 1.39 | 1.29 |
| 780 | 51 | Z | HB | Bobbins | 1.39 | 1.29 |
| 840 | 140 | Z | HB | Beams | 1.06 | 1.01 |
| 840 | 140 | Z | HB | Tubes | 1.06 | 1.01 |
| 840 | 140 | O | HB | Draw Wind | 1.06 | 1.01 |
| 840 | 140 | Z | RHB | Beams | 1.06 | 1.01 |
| 840 | 140 | Z | RHB | Tubes | 1.06 | 1.01 |
| 840 | 140 | Z | RHB | Cones | 1.10 | 1.01 |
| 840 | 140 | Z | Cordage Finish | | 1.04 | |
| 840 | 140 | Z | Textile Grade | | 1.12 | 1.01 |
| 840 | 140 | Z | Paper Tubes | | 1.10 | 1.01 |
| 1040 | 68 | Z | SD | Tubes | 1.15 | 1.05 |
| 1040 | 68 | Z | HB | Tubes | 1.15 | 1.05 |
| 1040 | 68 | Z | RSD | | 1.15 | 1.05 |
| 1050 | 170 | Z | HB | Tubes | 1.06 | .96 |
| 1050 | 170 | Z | RHB | Tubes | 1.06 | .96 |
| 1680 | 280 | Z | RHB | Beams | 1.03 | .98 |
| 1680 | 280 | Z | RHB | Tubes | 1.03 | .98 |
| 1680 | 280 | Z | RHB | Cones | 1.07 | 1.02 |
| 1680 | 280 | Z | HB | Tubes | 1.03 | .98 |
| 2080 | 136 | Z | SD | Tubes | 1.11 | 1.01 |
| 2520 | 420 | Z | RHB | Tubes | 1.06 | |
| 15120 | 2520 | Z | RHB | Tubes | 1.04 | |
| 15120 | 2520 | Z | RHB | Cordage Finish | 1.07 | |

* Types: D—Dull; SD—Semi-dull; B—Bright; H—High tenacity.
Bobbins are invoiced at 25¢ or 45¢ each, depending on type; tubes are invoiced at 40¢ each; spools invoiced at \$77.00 and \$95.00 depending on type; and beams and crates for beams are invoiced at \$220 and \$25 respectively.

Prices subject to change without notice.
Freight prepaid within Continental United States and Puerto Rico.

**NO YARN TRAPPING WITH
BRAZED ALUMINUM TWO POUND TAKE-UP BOBBIN**



New aluminum take-up bobbin with barrel and heads brazed together into a single unit prevents yarn trapping. Exceptional strength at price no higher than ordinary bobbins.

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ALLENTOWN

PENNSYLVANIA



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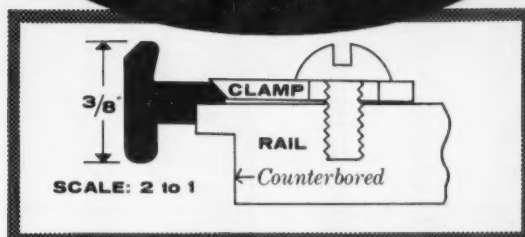
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"BACKSLOPE" RING
MOUNTS RIGHT IN
YOUR RAIL**



This shows how easily a narrow vertical ring fits directly into the rail with simple clamp and counterboring.

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you're looking for something else*



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have accumulated a vast store of experience in ceramic guide manufacture. We believe it helps explain why Lambertville guides are unsurpassed in smoothness, hardness, and uniformity. Available in white or 'Durablu' finish. Write for catalog and samples.

Lambertville Ceramic
AND MANUFACTURING COMPANY
LAMBERTVILLE, NEW JERSEY

LAMBERTVILLE: YOUR GUIDE TO BETTER OPERATIONS!

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Yarn

| Denier & Filament | Turns/Inch & Twist | Type | Package | 1st Grade | 2nd Grade |
|-------------------|--------------------|---------|------------------|-----------|-----------|
| 7-1 | 0 | 200 | Bobbin | \$9.47 | \$8.82 |
| 10-1 | 0 | 200 | Bobbin | 8.42 | 7.82 |
| 12-1 | 0 | 200 | Bobbin | 7.35 | 6.85 |
| 15-1 | 0 | 200 | Beam | 5.36 | 5.00 |
| 15-1 | 0 | 200 | Bobbin | 5.25 | 5.00 |
| 15-1 | 0 | 680 | Beam | 5.41 | 5.00 |
| 15-1 | 0 | 680 | Bobbin | 5.30 | 5.00 |
| 20-1 | 0 | 200 | Bobbin | 4.95 | 4.50 |
| 14-2 | 0.22 | 200 | Bobbin | 7.90 | 7.30 |
| 17-2 | 0.22 | 200 | Bobbin | 7.05 | 6.50 |
| 20-2 | 0.22 | 200 | Bobbin | 5.55 | 5.05 |
| 15-3 | 0.22 | 200 | Bobbin | 6.10 | 5.60 |
| 21-3 | 0.22 | 200 | Bobbin | 5.48 | 5.05 |
| 20-7 | 0.52 | 200 | Bobbin | 2.91 | 2.61 |
| 20-7 | 0.52 | 200 | Beam | 3.02 | 2.61 |
| 20-7 | 0.52 | 680 | Bobbin | 2.96 | 2.61 |
| 20-7 | 0.52 | 680 | Beam | 3.07 | 2.61 |
| 20-20 | 0.72 | 200 | Bobbin | 6.00 | 2.81 |
| 28-4 | 0.22 | 200 | Bobbin | 2.81 | 2.21 |
| 30-10 | 0.52 | 200 | Bobbin | 2.36 | 2.21 |
| 30-10 | 0.52 | 200 | Tricot Bms | 2.46 | 2.21 |
| 30-10 | 0.52 | 300 | Bobbin | 2.51 | 2.36 |
| 30-10 | 0.52 | 680 | Bobbin | 2.41 | 2.21 |
| 30-10 | 0.52 | 680 | Tricot Bms | 2.51 | 2.21 |
| 30-26 | 0.52 | 200 | Bobbin | 2.49 | 2.21 |
| 40-1 | 0 | 100 | Bobbin | 4.03 | 3.75 |
| 40-7 | 0.52 | 200 | Bobbin | 2.11 | 1.91 |
| 40-10 | 0.52 | 200 | Bobbin | 2.01 | 1.91 |
| 40-10 | 0.52 | 200 | Tricot Beams | 2.11 | 1.91 |
| 40-13 | 0.52 | 200 | Bobbin | 2.01 | 1.91 |
| 40-13 | 0.52 | 200 | Tricot Bms | 2.11 | 1.91 |
| 40-13 | 0.52 | 400 | Bobbin | 2.13 | 1.90 |
| 40-13 | 0.52 | 680 | Bobbin | 2.06 | 1.96 |
| 40-13 | 0.52 | 680 | Tricot Bms | 2.16 | 1.96 |
| 40-34 | 0.52 | 200 | Bobbin | 2.11 | 1.81 |
| 50-10 | 0.52 | 200 | Bobbin | 2.11 | 1.76 |
| 50-17 | 0.52 | 100/200 | Bobbin | 1.91 | 1.76 |
| 50-17 | 0 | 200 | Tubes | 1.91 | 1.76 |
| 50-17 | 0.52 | 680 | Bobbin | 2.01 | 1.76 |
| 60-20 | 0.52 | 200 | Bobbin | 1.82 | 1.63 |
| 60-34 | 0.52 | 300 | Bobbin | 1.86 | 1.76 |
| 70-17 | 0.52 | 200 | Bobbin | 1.71 | 1.66 |
| 70-34 | 0 | 100 | Tubes | 1.71 | 1.66 |
| 70-34 | 0.52 | 100/200 | Bobbin | 1.71 | 1.66 |
| 70-34 | 0 | 105/205 | Paper Tube | 1.71 | 1.66 |
| 70-34 | 0 | 200 | Tubes | 1.71 | 1.66 |
| 70-34 | 0.52 | 280 | Bobbin | 1.71 | 1.66 |
| 70-34 | 0.52 | 300 | Bobbin | 1.76 | 1.66 |
| 70-34 | 0.52 | 680 | Bobbin | 1.76 | 1.66 |
| 70-34 | 0 | 680 | Tubes | 1.76 | 1.66 |
| 80-20 | 0.52 | 200 | Bobbin | 1.71 | 1.60 |
| 90-26 | 0.52 | 200 | Bobbin | 1.76 | 1.66 |
| 100-34 | 0.52 | 200 | Bobbin | 1.65 | 1.60 |
| 100-34 | 0.52 | 300 | Bobbin | 1.70 | 1.60 |
| 100-34 | 0 | 300 | Tubes | 1.70 | 1.60 |
| 100-34 | 0.52 | 680 | Bobbin | 1.70 | 1.60 |
| 100-50 | 0.52 | 200 | Bobbin | 1.71 | 1.60 |
| 110-50 | 0.52 | 200 | Bobbin | 1.71 | 1.60 |
| 140-68 | 0.52 | 100 | Bobbin | 1.60 | 1.55 |
| 140-68 | 0 | 200 | Tubes | 1.60 | 1.55 |
| 140-68 | 0.52 | 200 | Bobbin | 1.60 | 1.55 |
| 140-68 | 0 | 205 | Tube | 1.60 | 1.55 |
| 140-68 | 0.52 | 300 | Bobbin | 1.65 | 1.55 |
| 200-20 | 12 | 100 | Bobbin | 1.49 | 1.44 |
| 200-34 | 0 | 100 | Tubes | 1.49 | 1.44 |
| 200-34 | 0.72 | 100 | Bobbin | 1.49 | 1.44 |
| 200-34 | 0 | 105 | Tube | 1.49 | 1.44 |
| 200-34 | 0.72 | 680 | Bobbin | 1.54 | 1.44 |
| 200-68 | 0.72 | 100/200 | Bobbin | 1.56 | 1.46 |
| 210-34 | 0 | 300 | Tubes | 1.49 | 1.44 |
| 210-34 | 0.72 | 300 | Bobbin | 1.49 | 1.44 |
| 210-34 | 0.72 | 300 | Beam | 1.54 | 1.44 |
| 210-34 | 0 | 305 | Tube | 1.49 | 1.44 |
| 210-34 | 0.72 | 320 | Bobbin | 1.58 | 1.44 |
| 260-17 | 12 | 300 | Bobbin | 1.49 | 1.39 |
| 400-68 | 0.72 | 100 | Bobbin | 1.39 | 1.29 |
| 420-68 | 12 | 300 | Bobbin | 1.39 | 1.29 |
| 420-68 | 12 | 300 | Beams | 1.44 | 1.29 |
| 520-34 | 12 | 300 | Bobbin | 1.39 | 1.29 |
| 630-102 | 0.72 | 300 | Bobbin | 1.39 | 1.29 |
| 780-51 | 12 | 300 | Bobbin | 1.39 | 1.29 |
| 800-140 | 0.52 | 100 | Bobbin | 1.39 | 1.29 |
| 840-140 | 0.52 | 300/700 | Al. Tbs. & Beams | 1.06 | 1.01 |
| 1680-280 | 0.52 | 300/700 | Al. Tbs. & Beams | 1.03 | .98 |

Color-Sealed Yarn

| Denier & Filament | Turns/Inch & Twist | Type | Package | 1st Grade | 2nd Grade |
|-------------------|--------------------|------|---------|-----------|-----------|
| 30-10 | 0.52 | 140 | Bobbin | \$2.71 | \$2.56 |
| 40-13 | 0.52 | 140 | Bobbin | 2.36 | 2.16 |
| 70-34 | 0.52 | 140 | Bobbin | 2.06 | 2.01 |
| 100-34 | 0.52 | 140 | Bobbin | 2.00 | 1.95 |
| 100-34 | 0 | 140 | Tubes | 2.00 | 1.95 |
| 200-20 | 0.72 | 140 | Bobbin | 1.84 | 1.79 |
| 200-34 | 0.72 | 140 | Bobbin | 1.84 | 1.79 |
| 260-17 | 12 | 140 | Bobbin | 1.84 | 1.79 |

Industrial Yarn

| Denier & Filament | Turns/Inch & Twist | Type | Package | Price/Lb. |
|--------------------------------------|--------------------|------|------------|-----------|
| 840-140 | 0.52 | *707 | Cone | \$1.04 |
| 5040-840 | 0 | *707 | Paper Tube | 1.08 |
| 7560-1260 | 0 | *707 | Paper Tube | 1.07 |
| 10080-1680 | 0 | *707 | Paper Tube | 1.07 |
| 15120-2520 | 0 | *707 | Paper Tube | 1.07 |
| * Made specifically for cordage use. | | | | |
| 2520-420 | 0 | 700 | Paper Tube | \$1.06 |
| 4200-700 | 0 | 700 | Paper Tube | 1.05 |
| 5040-840 | 0 | 700 | Paper Tube | 1.05 |
| 7560-1260 | 0 | 700 | Paper Tube | 1.04 |
| 10080-1680 | 0 | 700 | Paper Tube | 1.04 |
| 15120-2520 | 0 | 700 | Paper Tube | 1.04 |

These prices are subject to change without notice. Terms: Net 30 Days.

Types

Type 100—Bright, normal tenacity.
 Type 105—Bright, normal tenacity, low shrinkage (5-7%)
 Type 140—Bright, color-sealed, black, normal tenacity.
 Type 200—Semidull, normal tenacity.
 Type 205—Semidull, normal tenacity, low shrinkage (5-7%)
 Type 209—Semidull, normal tenacity, improved light durability and dye light fastness.
 Type 280—Semidull, normal tenacity, improved light durability and dye light fastness.
 Type 300—Bright, high tenacity.
 Type 305—Bright, high tenacity, low shrinkage (5-7%)
 Type 330—Bright, high tenacity, more heat & light resistant.
 Type 400—Semidull, high tenacity.
 Type 680—Dull, normal tenacity.
 Type 700—Bright, high tenacity.
 Type 707—Bright, high tenacity (over 8.5 gpd) cordage yarn.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

Following are invoiced as a separate item.

Bobbins—25 cents or 45 cents depending on type
 Aluminum Tube—40¢ each
 Draw Winder Tubes—\$.70 or \$1.00 depending on type
 Tire Cord Beams—\$220.00 each
 Cradles for Tire Cord Beams—\$115.00 each
 Tricot Beams—\$95.00 each
 Cradles for Tricot Beams—\$130.00 each
 (Beams and Cradles are deposit carriers and remain the property of E. I. du Pont de Nemours & Co., Inc.)

POLYESTER

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"™

| Denier & Filament | Turns/Inch | Luster | Type* | Tubes 1st Gr. |
|-------------------|------------|----------|-------|---------------|
| 30-14 | 0 | Bright | 55 | \$2.71 |
| 30-20 | 0 | Semidull | 56 | 2.71 |
| 40-27 | 0 | Semidull | 56 | 2.31 |
| 40-27 | 0 | Bright | 55 | 2.31 |
| 40-27 | 0 | Dull | 57 | 2.36 |
| 70-34 | 0 | Semidull | 56 | 0 |
| 70-34 | 0 | Bright | 55 | 1.91 |
| 70-34 | 0 | Bright | 55 | 1.91 |
| 70-34 | 0 | Dull | 57 | 1.96 |
| 100-34 | 0 | Semidull | 56 | 1.84 |
| 140-28 | 0 | Bright | 55 | 1.79 |
| 150-34 | 0 | Semidull | 56 | 1.79 |
| 220-50 | 0 | Bright | 51 | 1.76 |
| 250-50 | 0 | Bright | 55 | 1.76 |
| 1100-250 | 0 | Bright | 51 | 1.50 |
| 1100-250 | 0 | Bright | 52 | 1.50 |

Terms: Net 30 days.

Domestic Freight Terms are F.O.B. shipping point, freight prepaid our route within the Continental limits of the U. S., excluding Alaska.

* Type:

Type 51—Bright, high tenacity.
 Type 52—Bright, high tenacity.
 Type 55—Bright, normal tenacity.
 Type 56—Semidull, normal tenacity.
 Type 57—Dull, normal tenacity.

Tubes are invoiced as a separate item at \$.70 each.

* "DACRON" is DuPont's registered trade-mark for its polyester fiber.

SARAN

The National Plastics Products Company—

Fibers Division

Odenton, Maryland

41 East 42 Street, New York 17, N. Y. (Oxford 7-8996)

Current Prices:

| Type | Twist p. l. | Natural | Colors |
|---------|-------------|---------|--------|
| 1240/10 | 3 | \$1.32 | \$1.80 |
| 750/20* | 3 | 1.75 | 1.80 |

* For filter fabrics and other industrial purposes only.

F.O.B. Odenton, Maryland.

Terms: Net 30 days.

NON CELLULOSIC STAPLE & TOW

ACRYLIC

American Cyanamid Co.

Fibers Division

Effective Date: June 15, 1959

Cyanamid Acrylic Staple

| | 1st Grade Price (per pound) |
|--|-----------------------------|
| 2.0 Denier Bright and Semi-Dull | \$1.28 |
| 3.0 Denier Bright and Semi-Dull | 1.18 |
| 5.0 Denier Bright and Semi-Dull | 1.18 |
| 15.0 Denier Bright, Semi-Dull and Dull | 1.01 |

Staple Lengths: 1½", 2" 2½", 3", 3½", 4", 4½".

Information provided on request for Deniers, Lengths and Lustres not listed above.

Prices are subject to change without notice.

Terms: Net 30 Days.

F.O.B. Shipping Point—Minimum transportation allowed (Seller's route and method within the continental limits of the United States excluding Alaska. If Buyer requests and Seller agrees to a route or method involving higher than minimum rate, Buyer shall pay the excess transportation cost.

Note: CRESLAN® is Cyanamid's registered trademark for certain of its acrylic fibers. Use of this trademark is authorized only on properly constructed fabrics, after they have been tested and approved by Cyanamid.

The Chemstrand Corp.

Current Prices

"Acrlan"™

Effective January 1, 1959

| | Regular Acrlan | Acrlan 16 |
|--|-------------------|-----------|
| 2.0 denier Semi-Dull and Bright staple & tow | \$1.24 | \$1.24 |
| 2.5 denier Hi-Bulk Bright and Semi- dull staple and tow | 1.18 | 1.18 |
| 3.0 denier Bright & Semi-dull staple & tow | 1.18 | 1.18 |
| 5.0 denier Bright & Semi-dull staple & tow | 1.18 | 1.18 |
| 8.0 denier Bright & Semi-dull staple | 1.18 | 1.18 |
| 15.0 denier Bright & Semi-dull staple | 1.01 | 1.05 |

Terms: Net 30 days. Freight prepaid within Continental U. S. & Puerto Rico.

* "Acrlan" is Chemstrand's registered trademark for its acrylic fiber.

The Dow Chemical Company

Textile Fibers Department

Current Prices

"Zefran"™

| | |
|--|--------|
| 2.0 denier Semidull & Bright—Staple only | \$1.28 |
| 3.0 denier Semidull & Bright—Staple only | 1.28 |
| 6.0 denier Semidull & Bright—Staple only | 1.18 |

Terms: Net 30 days.

Transportation Terms: F.O.B. shipping point—Freight prepaid our route within the continental limits of the U. S., excluding Alaska.

* "Zefran" is Dow's registered trademark for its acrylic fiber.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Orlon"™ Acrylic Staple & Tow

| Type 42 | Staple Length | Tow Blds. | 1st Grade |
|----------------------------------|----------------------------------|-----------|-----------|
| 1.0 Denier Semidull | 1 1/4, 1 1/2, 2, 2 1/2, 3 | 390M | \$1.28 |
| 2.0 Denier Semidull & Bright | 1 1/4, 1 1/2, 2, 2 1/2, 3, 4 1/2 | 470M | 1.28 |
| 3.0 Denier Semidull & Bright | 1 1/4, 1 1/2, 2, 2 1/2, 3, 4 1/2 | 470M | 1.28 |
| 3.0 Denier Semidull Color-sealed | | | |
| Black | 1 1/4, 1 1/2, 2, 2 1/2, 3, 4 1/2 | 470M | 1.63 |
| 6.0 Denier Semidull & Bright | 1 1/2, 2, 2 1/2, 3, 4 1/2 | 470M | 1.18 |
| 6.0 Denier Color-sealed Black | 1 1/2, 2, 2 1/2, 3, 4 1/2 | 470M | 1.55 |
| 4.5 Denier Semidull | 1 1/2, 2, 2 1/2, 3, 4 1/2 | 470M | 1.18 |
| 10.0 Denier Semidull & Bright | 1 1/2, 2, 2 1/2, 3, 4 1/2 | 470M | 1.18 |

Tow—Total Denier 470,000

Staple Lengths—1 1/4", 2", 2 1/2", 3", 4 1/2"

High Shrinkage Staple price as Regular Staple

Type 25 This product is designed for Cotton/Rayon System Spinning and is 2.5 denier, 1 1/2" semidull regular shrinkage staple. \$1.18

Type 38—1.1 Denier—Semidull—320M Tow \$1.28

This product can be dyed, stretched and cut to produce staple which will shrink as much as 38% when subjected to heat.

Type 39 This product is designed for woolen system spinning and is a blend of deniers (average 4.2) with a variable cut length. \$.94

Type 39A This product is designed for woolen system spinning and is a blend of predominately fine deniers (average 2.4) with a variable cut length. \$.94

Type 39B This product is designed for woolen system spinning and is a blend of predominately heavy deniers (average 6.5) with a variable cut length.

F.O.B. Shipping Point—Freight prepaid our route within the continental limits of the United States, excluding Alaska.

MODACRYLIC

Eastman Chemical Products, Inc.

Tennessee Eastman Co.

Effective November 3, 1958

"Verel"™ Staple and Tow

| Deniers | Dull and Bright |
|----------------------|------------------|
| 2 and 3 | \$1.02 per pound |
| 5, 8, 12, 16, and 20 | .82 |
| 24 denier | .97 |

Prices are subject to change without notice.

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in continental United States, except Alaska. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

* "Verel" is a trade-mark of the Eastman Kodak Co.

Union Carbide Chemicals Co.

Div. Union Carbide Corp.

Textile Fibers Dept.

Effective October 1, 1957

Dynel Staple & Tow

| | |
|--|-----------------------------------|
| Natural Dynel | |
| 3, 6, and 12 Denier, Staple and Tow | 1.10 per lb. |
| 24 Denier, Staple and Tow | 1.05 per lb. |
| Dynel Spun with Light Colors: | |
| Blond or Gray | |
| 3 and 6 Denier, Staple and Tow | 1.30 per lb. |
| Dynel Spun with Dark Colors: | |
| Black, Charcoal, Brown, Caramel, Green, and Blue | |
| 3 and 6 Denier, Staple and Tow | 1.40 per lb. |
| Dynel Type 63 High Shrinkage (3 Denier only) | Add \$.05 per lb. to above prices |

Prices are quoted f.o.b. South Charleston, W. Va.

NYLON

American Enka Corp.

Effective August 19, 1958

Enka Nylon (Nylon Six Staple)

| Denier | Luster | Length (Inches) | Price per pound |
|--------|-----------|----------------------------------|-----------------|
| 3 | semi-dull | 1 1/2, 1 3/4, 2, 2 1/2, 3, 4 1/2 | \$1.28 |
| 6 | bright | 3, 4 1/2 | 1.28 |
| 8 | bright | 2 1/2 | 1.15 |
| 10 | bright | 3 | 1.08 |
| 15 | bright | 3 | 1.08 |
| 15 | semi-dull | 3 | 1.08 |

Deniers and lengths of staple not listed above are available upon special request.

Terms: Net 30 days. Minimum common carrier transportation charges will be prepaid and absorbed to the first destination in the continental United States. In prepaying transportation charges, the seller reserves the right to select the carrier used.

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

Nylon Staple and Tow

| Denier | Type | Staple Lengths | Tow Bundle | 1st. Grade Price/Lb. | 2nd Grade Price/Lb. |
|--------|---------|----------------|------------|----------------------|---------------------|
| 1.5 | 200 | 1 1/4"—4 1/2" | None made | \$1.33 | \$1.18 |
| 1.5 | 201 | 1 1/4"—4 1/2" | None made | 1.35 | 1.20 |
| 2.2 | 420 | 1 1/2" only | None made | 1.28 | 1.13 |
| 3.0 | 100/200 | 1 1/4"—4 1/2" | 430M | 1.28 | 1.13 |
| 3.0 | 101/201 | 1 1/4"—4 1/2" | 455M | 1.30 | 1.15 |
| 6.0 | 100 | 1 1/2"—6 1/2" | 330M | 1.28 | 1.13 |
| 6.0 | 101 | 1 1/2"—6 1/2" | 345M | 1.30 | 1.15 |
| 15.0 | 100 | 1 1/2"—6 1/2" | 425M | 1.08 | ..... |
| 15.0 | 101 | 1 1/2"—6 1/2" | None made | 1.10 | ..... |
| 15.0 | 600 | 1 1/2"—6 1/2" | 425M | 1.10 | ..... |
| 15.0 | 601 | 1 1/2"—6 1/2" | None made | 1.12 | ..... |

Staple lengths are restricted to the range shown opposite each denier above. The actual cut lengths within these ranges are as follows:

1 1/2, 1 3/4, 2, 2 1/2, 3, 4 1/2 and 6 1/2

Types

Type 100 Bright, normal tenacity, not heatset.

Type 101 Bright, normal tenacity, heatset.

Type 200 Semidull, normal tenacity, not heatset.

Type 201 Semidull, normal tenacity, heatset.

Type 420 Semidull, high tenacity, high modulus, no crimp.

Type 600 Dull normal tenacity, not heatset.

Type 601 Dull normal tenacity, heatset.

These prices are subject to changes without notice.

Terms—Net 30 Days.

Freight Terms—Terms are F.O.B. shipping point, freight prepaid our route within the continental limits of the United States, excluding Alaska.

Industrial Rayon Corp.

Effective August 18, 1958

Nylon Staple

| | |
|-------------------|----------------|
| 1.5 denier | \$1.33 per lb. |
| 2, 3 and 6 denier | 1.28 per lb. |
| 8 denier | 1.15 per lb. |
| 15 and 22 denier | 1.08 per lb. |

Bright, semi-dull, and full-dull. Required lengths.

NYTRIL

B. F. Goodrich Chemical Co.

A division of The B. F. Goodrich Co.

DARVAN

Effective Nov. 21, 1958

| Type | Not Crimp Set | Crimp Set |
|-----------------------|---------------|-----------|
| 3, 4 1/2 and 6 Denier | \$1.45 | \$1.50 |
| 1 1/2, 2 Denier | \$1.50 | \$1.55 |

Pack in 100 Lb. Bales, Net Staple lengths 1 1/2, 2, 3, 4 1/2 Tow—90,000 Total Denier Bright, Semi-dull, Dull

(Deniers and lengths of staple not listed above are available upon special request.)

Terms: Net 30 Days.

F.O.B. Shipping Point (Avon Lake, Ohio) Minimum freight prepaid our route to points east of the Mississippi River within the continental limits of the United States, for points west of the Mississippi River freight allowed to the Mississippi River crossing nearest purchaser's mill if overland, or port of exit of purchaser's choice east of the Mississippi River.

POLYESTER

Beaunit Mills Inc.

"Vycron"

Polyester (Semi-Dull)

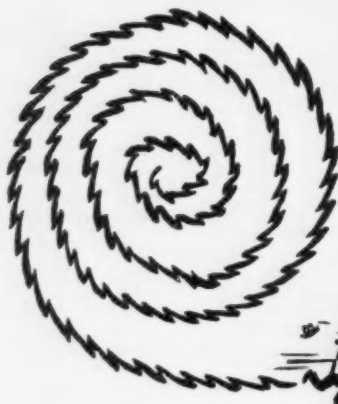
Current Prices

April 13, 1959

| Staple | Denier | Cut* | Per Lb. |
|---|----------------------|--------|---------|
| | 1.5 | 1 1/2" | \$1.36 |
| | 3.0 | 2" | 1.36 |
| (* Can be cut to other lengths when desired). | | | |
| Tow for Converters | | | |
| (Tow Bundle 200,000 Den.) | 1.5 den. | | 1.36 |
| | 3.0 den. | | 1.36 |
| Tow Yarn for Direct Spinners | | | |
| | 1.5 den. (1680/1120) | | 1.45 |
| | 1.5 den. (3360/2240) | | 1.36 |
| | 3.0 den. (3360/1120) | | 1.36 |

Du Pont Sparkling Nylon

Du Pont has introduced "Du Pont Sparkling Nylon," a new 15-denier specialty yarn for use in hosiery. Styling in hosiery, heretofore, has depended on color, texture, pattern and shape. The new yarn is said to be the first instance when a yarn alone has been able to establish a clear distinction between formal and casual stockings. Both seamless and full-fashioned stockings will be made of the new yarn, including golds and silvers, in a range of textures. Development of "Sparkling Yarn" resulted from a discovery that changing the amount of exposed surface area in a monofilament yarn could make it gleam with many highlights. The new specialty yarn will not replace Du Pont's regular 15-denier nylon.



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This "F" Type Cleaner has recently proved to be the most versatile of the eight different models of D.F.D. Cleaners, owing to its adaptability to the latest models of textile machines. For further information, ask for our brochure on Type "F", The Versatile Cleaner.

The unique D.F.D. system of reversible blades provides four sizes of openings with two blades, ten sizes with three blades and eighteen sizes with four blades. Cleaner designed to create oscillating motion of threads; prevents early cutting of hardened tool steel blades.

Write for Details

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1357-97 Monsey Ave.

Scranton 2, Pa.

Coarse Denier Yarns, No-Twist Tubes

| 1.5 Denier | 3.0 Denier | 1.65 |
|------------|------------|------|
| 420/280 | 420/140 | 1.60 |
| 840/560 | 840/280 | 1.50 |
| 1260/840 | 1260/420 | 1.45 |
| 1680/1120 | 1680/560 | 1.36 |
| 3360/2240 | 3360/1120 | |

E. I. du Pont de Nemours & Co.

Textile Fibers Dept.

Current Prices

"Dacron"™ Staple and Tow

| Denier | Luster | Type* | Length | Tow Bundle | 1st Gr. |
|--------|----------|-------|---------------|------------|---------|
| 1.25 | Semidull | 54 | 1 1/4"-3" | None made | \$1.36 |
| 1.5 | Semidull | 64 | Tow only | 550M | 1.41 |
| 1.5 | Semidull | 54 | 1 1/4"-3" | 550M | 1.36 |
| 3.0 | Semidull | 64 | 1 1/4"-4 1/2" | 450M | 1.41 |
| 3.0 | Semidull | 54 | 1 1/4"-4 1/2" | 450M | 1.36 |
| 3.0 | Semidull | 61 | 1 1/4"-4 1/2" | None made | 1.36 |
| 4.5 | Semidull | 64 | 1 1/4"-4 1/2" | 450M | 1.36 |
| 4.5 | Semidull | 54 | 1 1/4"-4 1/2" | 450M | 1.31 |
| 6.0 | Semidull | 64 | 1 1/4"-4 1/2" | 450M | 1.36 |
| 6.0 | Semidull | 54 | 1 1/4"-4 1/2" | 450M | 1.31 |
| 6.0 | Semidull | 61 | 1 1/4"-4 1/2" | None made | 1.31 |

* Type:

Type 54—Semidull, Normal Tenacity.

Type 61—Round Cross-section Industrial Staple having 45%

Boil-off Shrinkage.

Type 64—More Pill Resistant Staple, with Greater Dyeing Versatility.

F. O. B. Shipping Point—Freight prepaid our route within the continental limits of the United States, excluding Alaska.

Eastman Chemical Products, Inc.

Tennessee Eastman Co. Effective September 15, 1958

"Kodel"™

| | |
|--------------------|--------|
| 1 1/2 denier | \$1.60 |
| 3 and 4 1/2 denier | 1.50 |

Terms: Net 30 days. Payment—U. S. A. dollars.

Transportation charges prepaid or allowed to destination in continental United States, except Alaska. Seller reserves right to select route and method of shipment. If Buyer requests and Seller agrees to a route or method involving higher than lowest rate Buyer shall pay the excess of transportation cost and tax.

* "Kodel" is a trade-mark of the Eastman Kodak Company.

VINYON

American Viscose Corp. Effective October 1, 1956

Avisco Vinyon Staple

| | | |
|------------|-----------------|----------------|
| 3.0 denier | 1/2" unopened | \$8.00 per lb. |
| 3.0 " | 1 1/4" unopened | .80 per lb. |
| 3.0 " | 1 1/4" opened | .90 per lb. |
| 3.0 " | 2" opened | .90 per lb. |
| 3.0 " | 2" unopened | .80 per lb. |
| 5.5 " | 1" opened | .90 per lb. |
| 5.5 " | 3 1/2" opened | .90 per lb. |
| 5.5 " | 3 1/2" unopened | .80 per lb. |

Terms: Net 30 days.

SARAN

The National Plastics Products Company—

Fibers Division

Odenton, Maryland

Current Prices:

Saran Staple

| Current | Denier | Natural | Colors |
|---------|--------|---------|--------|
| 2N | 22 | \$0.70 | \$0.75 |
| 2N | 16 | .74 | .79 |
| 3Q* | 22 | .68 | .72 |

In any staple length 1 1/2 to 6". Also 45 denier, 7" cut.

* For carpets and industrial fabrics.

F.O.B. Odenton, Maryland.

Terms: net 30 days.

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| 8 inches | 52.00 |

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CELANESE FIBERS COMPANY

A Division of Celanese Corporation of America
P. O. Box #1414, Charlotte, North Carolina

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Calendar of Coming Events

Nov. 4—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
 Nov. 9-10—Narrow Fabric Institute annual meeting. Hotel Biltmore, New York, N. Y.
 Nov. 11-15—National Association of Waste Material Dealers fall meeting. Diplomat Hotel, Hollywood Beach, Fla.
 Nov. 17-20—Packaging Machinery Manufacturers Institute Show. Coliseum, New York, N. Y.
 Nov. 18—Tufted Textile Manufacturers Association interim Workshop meeting. Patten Hotel, Chattanooga, Tenn.
 Nov. 30-Dec. 4—Chemical Industries 27th Exposition. Coliseum, New York, N. Y.
 Dec. 2—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
 Dec. 4—AATCC Northern New England Section joint symposium with ASME Textile Engineering Div. Smith House, Cambridge, Mass.

1960
 Jan. 6—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
 Jan. 25-28—Plant Maintenance & Engineering Show. Convention Hall, Philadelphia, Pa.
 Feb. 2-4—SPI Reinforced Plastics Division conference. Edgewater Beach Hotel, Chicago, Ill.
 Feb. 3—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
 Feb. 8-9—National Cotton Council annual convention. Dallas, Texas.

Feb. 18-19—American Society for Quality Control, Textile Div. annual conference. Clemson House, Clemson, S. C.
 Mar. 2—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
 Mar. 10-11—Fiber Society spring meeting. Roosevelt Hotel, New Orleans, La.
 Apr. 6—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
 Apr. 7-9—American Cotton Manufacturers Institute annual convention. American Hotel, Bar Harbor, Fla.
 Apr. 28-30—Phi Psi National Textile Fraternity 57th annual convention. Hotel Roosevelt, New York, N. Y.
 Apr. 29—Underwear Institute annual meeting. Hotel Biltmore, New York, N. Y.
 May 4—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
 May 23-27—American Textile Machinery Exhibition. Auditorium, Atlantic City, N. J.
 May 25-28—Tufted Textile Manufacturers Association annual convention. Fontainebleau Hotel, Miami Beach, Fla.
 May 31-Jun. 2—Cotton Research Clinic. Grove Park Inn, Asheville, N. C.
 Jun. 1—AATT monthly meeting. Della Robbia Room, Hotel Vanderbilt, New York, N. Y.
 Jun. 23-25—Southern Textile Association annual convention. Grove Park Inn, Asheville, N. C.
 Oct. 3-7—Southern Textile Exposition. Textile Hall, Greenville, S. C.
 Oct. 6-8—AATCC national convention. Sheraton Hotel, Philadelphia, Pa.

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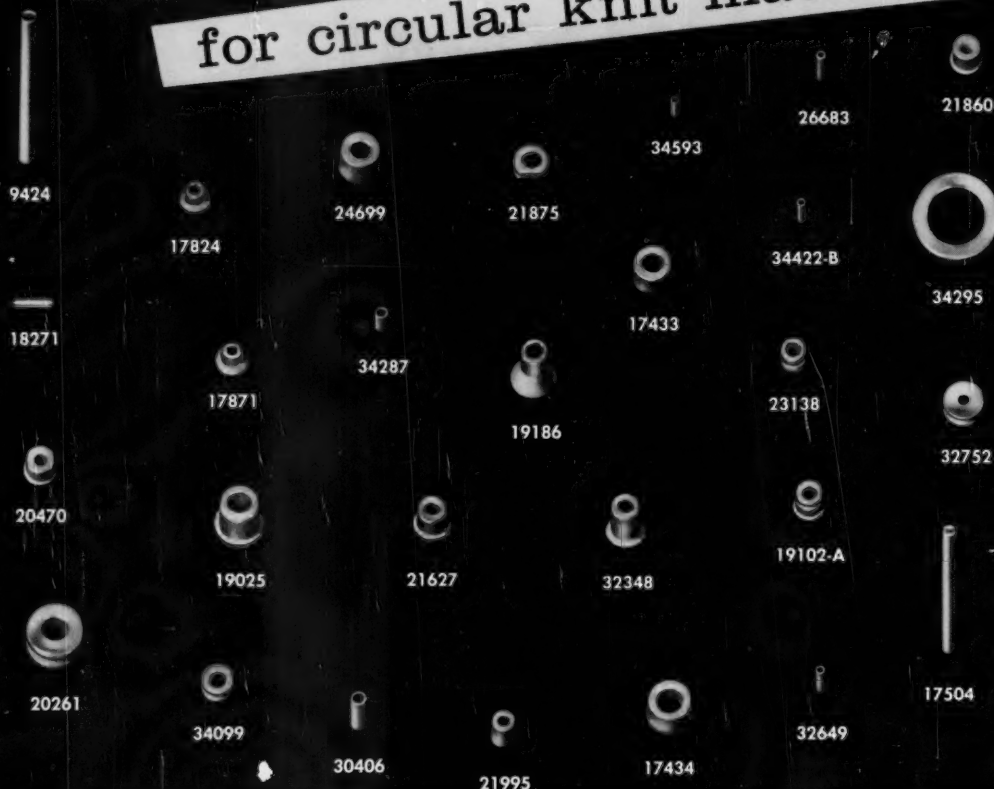
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